

ADIBASI

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A quarterly Journal of Anthropological and Sociological Research containing papers and findings emphasizing tribal problems of Orissa.

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A quarterly journal of Tribal &
Harijan Research-cum-Training Institute,
Orissa

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The Indian sub-continent represents a mosaic of varied racial, linguistic and cultural patterns. Among them tribal culture occupies an unique position. As per 1991 Census the Scheduled Tribe and Scheduled Caste Population constitute 7.76 and 15.76 per cent respectively of the country's total population. In the heart of India, Orissa, the State of rich tribal heritage, is inhabited by 62 Scheduled Tribe and 82 Scheduled Caste communities constituting 22.43 and 14.66 per cent, respectively of the total population of the State. The Scheduled communities irrespective of their number, language and place of habitation, occupy distinct places of their own in the main stream of Indian culture and civilisation, retaining their own identity and cultural self image.

In the context of progress, a new look at this cultural context has become essential. These communities are in different stages of economic and educational development. Hence, many programmes of economic development are being implemented to ameliorate their conditions, while retaining their identity and cultural core unaffected to the extent possible.

There is no denying the fact that these communities require special attention for their development in order to bring them into the national main stream and to be at par with other communities. To formulate and implement meaningful plans and programmes for their upliftment, it is essential to know about their way of life, their culture, their needs and aspirations.

'ADIBASI' aims at bringing home to the public in general and the Planners, Anthropologists, Sociologists and Administrators in particular the cultural traits and mode of living of the Scheduled Tribes and Scheduled Castes to enable them to perform the tasks properly and successfully. It also aims at studying the process of cultural change in the context of such development.

This issue includes three articles covering different aspects of tribal culture and development which will definitely provide the readers with many useful information and approaches to the subject.

Nityananda Patnaik

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is published four times a year in March, June, September and December by the Tribal & Harijan Research-cum-Training Institute, Unit-VIII, Bhubaneswar-751003.

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ABOUT THE JOURNAL

This is a quarterly journal published in March, June, September and December by the Tribal and Harijan Research-cum-Training Institute, Bhubaneswar, Orissa. Articles dealing with research findings in various social sciences, developmental strategies and other co-related matters emphasizing the problems of the Scheduled Castes and Scheduled Tribes are published in this journal. It also publishes reviews of books pertaining to the aforementioned subjects.

Beginning with this issue an Editorial Board has been constituted for the journal with the following members:—

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Contributions based on Anthropology, Demography, Economics, Human Geography, Museology, Planning and Sociology with particular reference to Scheduled Castes and Scheduled Tribes are invited. The articles should be type-written in double space on one side of half foolscap paper. Invariably two copies of the article should be sent. The contributors should also not forget to give their bio-data in a separate sheet alongwith the article and its brief synopsis. No remuneration is paid to the contributors. Only twenty-five off-prints of the articles are supplied. Two copies of the books should be sent for purpose of review.

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All correspondences about the journal should be addressed to the Editor, "Adibasi", Tribal & Harijan Research-cum-Training Institute, Unit-VIII, Bhubaneswar-75100.

DEVELOPMENT AND CULTURE

A VIEW FROM INDIA'S TRIBAL WORLD

Dr. Sitakant Mahapatra

Tribals account for 7.76 per cent of India's population. They number 52.3 million as per the 1981 Census. They are largely concentrated in 10 States of the Central Highlands, the Chhotanagpur plateau, the Eastern Ghats in Orissa and Andhra Pradesh and the Western parts of the country. These regions account for about 85 per cent of the total tribal population in the country. The north-eastern States account for the remaining fifteen per cent.

TABLE 1
Population of Scheduled Tribes in India by States¹

| State | 1981 | | 1971 | | Increase 1981-71 % |
|-------------------|--------------------------|--------------------------------|--------------------------|--------------------------------|--------------------------|
| | Population (millions) | Percent of total population | Population (millions) | Percent of total population | |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Andhra Pradesh | 3.2 | 5.9 | 2.2 | 5.1 | 45.4 |
| Assam | 2.2 | 11.0 | 1.6 | 11.0 | 37.6 |
| Bihar | 5.8 | 8.3 | 4.9 | 8.8 | 18.4 |
| Gujarat | 4.8 | 14.2 | 3.8 | 14.7 | 28.3 |
| Madhya Pradesh | 5.8 | 9.2 | 3.8 | 7.6 | 52.6 |
| Meghalaya | 1.1 | 80.6 | 0.8 | 80.4 | 37.5 |
| Orissa | 5.9 | 22.4 | 5.1 | 23.1 | 15.7 |
| Rajasthan | 4.2 | 12.2 | 3.1 | 12.2 | 35.5 |
| West Bengal | 3.1 | 5.6 | 2.6 | 5.9 | 19.2 |
| Others (Incl. VI) | 4.2 | -- | 3.4 | -- | -- |
| All India Tribals | 52.3 | 7.6 | 41.1 | 7.5 | 27.2 |

1. Only States with tribal population over 1 million

They occupy around 18.7 per cent of the total geographical area of the country, usually in the difficult and inhospitable terrain in the hills and valleys. The soil has generally low productivity. The tribal communities of India vary widely in their degrees of isolation, levels of acculturation, numbers and ethnography. There are about 260 tribal communities in India speaking 105 languages and another 225 subsidiary dialects. So far as numbers are concerned the tribal communities range all the way from the Santals, the Bhils and the Gonds who number more than 4 million each to small groups like Chenchu who number less than 100 or communities like Mankidia and Tharus who number less than 1000 each. Obviously their social and cultural values, life-styles and the pace of modernisation and economic development vary very widely. The tribal communities range all the way from hunters and gatherers to settled peasant cultivators.

Agriculture is mostly at the subsistence level, often based on slash and burn techniques or shifting cultivation. A recent study conducted by the Administrative Staff College of Hyderabad reveals that production from land is very inadequate to maintain a household at subsistence level. They have therefore to depend on gathering minor forest produce for maintaining a reasonable economic balance and to supplement the meagre produce from the land. Geographically isolated, they live in areas which are not well communicated and have poor infrastructural facilities. Their economy is only slowly getting monetised. Enrolment in schools is low and drop out rate very high. Percentage of literacy compares very unfavourably with the general literacy except in Meghalaya and Assam (North-Eastern States) where the tribals are more westernised and christianised than in rest of the country.

TAB LE 2

Literacy Rate in Scheduled Tribes compared to Total Population by States (Census 1971)

| | Total | Tribal Population | | Total Population | |
|----------------|-------|-------------------|------|------------------|------|
| | | % | % | % | % |
| Andhra Pradesh | .. | 5.3 | 8.3 | 2.1 | 24.6 |
| Assam | .. | 26.0 | 34.6 | 17.2 | 29.7 |
| Bihar | .. | 11.6 | 18.4 | 4.8 | 19.9 |
| Gujarat | .. | 14.1 | 21.8 | 6.6 | 35.8 |
| Madhya Pradesh | .. | 7.6 | 13.0 | 2.2 | 22.1 |
| Maharashtra | .. | 11.7 | 19.1 | 4.2 | 39.2 |
| Meghalaya | .. | 26.4 | 30.1 | 22.8 | 29.5 |
| Orissa | .. | 9.5 | 18.4 | 2.6 | 26.2 |
| West Bengal | .. | 8.9 | 14.6 | 3.1 | 33.2 |

Many of them possess a well-knit socio-cultural system, strong kinship bonds, a stable village organisation and a fairly high level of performing arts. They also fabricate many exquisite art objects in metal, bamboo timber, local grass and leaves of trees. The textiles produced manually in small looms and their pottery are of very high order of excellence. They also have a high level of plastic arts. Their wall decorations with mural paintings, using local

earth colours and other supplemental primary colours, are also of a very high level sophistication and complexity. The Saora pictograms painted on the walls by the priest (Kudan) have attracted world wide attention. Verier Elwin had documented some of it in *Tribal Art of Middle India*. A more comprehensive documentation and analysis done by this author linking this plastic art-form to its ritual base to cure/ward off diseases and natural calamities is

shortly going to be published. The Santals of Eastern India build houses which are well-known for their symmetry, cleanliness, elegance and they paint the walls with floral motifs and geometrical designs. Most of the tribal communities have a vast repertoire of songs and dances linked to ritual performances at the recurring festivals of the agricultural cycle and occasions of life-cycles or rites of passage such as birth, marriage, death and attainment of puberty. This author has translated and edited with critical introductions seven anthologies of such oral poetry of the Indian tribes. These song-poems reveal a high degree of competence in using language, a preference for use of symbols even in matter-of-fact day-to-day social communication and an attitude of celebrating life even in the midst of poverty and deprivation. They reveal a sense of gratitude for the fact of being alive and a mood of acceptance of life on its own terms almost in an existential way. There is no fashionable despair, cynicism or turning back on life.

Thus a fairly high level of social and cultural expression co-exists with economic backwardness and isolation in the tribal world of India.

Right up to the end of the sixties the low density of population in the tribal areas made possible a reasonable balance between the system of agricultural production through shifting cultivation and dependence on the forest. However with the passage of time the population of the tribal communities has increased. On the other hand population pressure in the plains have also pushed up the non-tribal people to these areas. Besides this a number of Industrial, Mining and Irrigation Projects have come up in the tribal areas which has resulted in the acquisition of tribal land for public purposes and depletion of public land. All this has resulted in the loss of good arable land and the tribals have been forced to become even more dependant on the hill slopes and the forest. On the other hand, increasing demand for fuel and timber in the plains has also multiplied and this has resulted in the shrinkage of forest areas.

Combination of these above factors has resulted in the tribals living today in a rather deteriorating economic and environmental situation. As the area on which they depend for subsistence decreases the rotation of shifting cultivation on a particular patch becomes faster. This in turn results in decrease of soil fertility,

less yield and in some areas even accelerated soil erosion.

Since independence public policy in India has sought to protect the tribal communities in the face of their vulnerability to exploitation. Article 46 of the Constitution of India provides that "the State shall promote with special care the educational and economic interests of the weaker sections of the people and, in particular, of the Scheduled Tribes, shall protect them from social injustice and all forms of exploitation". There are other provisions in the Constitution which reiterate this basic principle. Over the years there has also been a host of special legislations and action programmes for protection and economic advancement of the tribals.

On the whole the central objective of tribal development has been their socio-economic progress with a view to integrate them with the rest of the community on a footing of equality while maintaining their cultural autonomy to the largest extent possible. There has been a search for a proper design of development which will marry their natural talents, cultural forms, value-systems and personality traits with the imperatives of growth and modernisation.

The objective of the development policy is thus to work through their socio-cultural institutions putting right emphasis on the ecology of the region and taking into account the tribe's dependence on the forest and hill-slopes.

All generalisation about the tribal world of India, will suffer from a degree of over-simplification. However, certain general aspects of the mechanism of change and modernisation can be examined and conclusions drawn. This author has had the privilege of working among a large number of tribes in Eastern India particularly Orissa, Bihar and West Bengal among whom are some of the major communities like the Santals, the Mundas and the Kondhs as well as the smaller communities like the Juang and the Koyas.

It is possible to speak of a folk-tribal continuum in the Indian social situation. However, the real folk tradition and the tribal traditions differ in certain essential features. The rural-folk social system is dominated by the non-tribals, majority of whom happen to be caste-Hindus. Value-systems, traditional mores, life-attitudes, social hierarchy and patterns of authority differ

significantly. The tribal societies on the other hand, have some degree of commonality and parallelism in the above aspects as also in their approach to disease and sickness, life and death and the community's attitude to religion and modern values, modernisation and tradition. Informing all such attitudes and value systems there is also often a search for their own identity, the roots. Ethnic culture tends to bolster socio-cultural egoism. Writing about Mexican Amerindio faced with the anonymity and sense of loss in the setting of urban life, Américo Paredes (1968) quotes the responses of the individual in seeking "to give some meaning to existence, some dignity and individuality to himself, by shoring up his roots with the bits and pieces of his ethnic past."

Ethnic identity takes shape in a disparate mass of ethnic folklore. The supernatural and the symbolic aspects of asserting such identity are enshrined in the folklore. Milton M. Gordon (1964) speaks of two types of such group-identification-historical and participational. The former is based upon a sense of "peoplehood" and "shared fate" while the latter is based upon a sense of being comfortable with some, as distinct from others. The tribes often have an elaborate historical-mythological account of their ancestry, peoplehood and shared fate. An ethnic group consists of those who conceive of themselves as being alike by virtue of their common ancestry, real or fictitious, and who are so regarded by others.

This sense of identity and cultural self-image defines a tribe's degree of ethnic solidarity and often sets it apart from other non-tribal world which encloses it. It is in this sense that the tribal societies in India are significantly different from their counterparts in Africa where they constitute the predominant majority and in many cases control political power and authority.

Significant political and economic changes are taking place in India's tribal world. New technologies in agriculture, family planning and health, irrigation projects and sub-plans for the tribal areas, the panchayat system of political decentralisation and participation have come in to the area. The tribal can no longer remain geographically or socially exclusive. On the one hand there is a discernibly vested interest in the maintenance of an exclusive sense of identity emphasising a Great Tradition. On the other there is a growing awareness that the new political and economic system alone can bring

in the benefits of economic development, such as roads, drinking-water wells, modernised agriculture, schools, dispensaries, co-operative societies, branches of rural banks and extension workers engaged in the task of development. There are the traditional, often hereditary leaders, the old-world élites who despite their declining authority in the present political context, still hold sway over the minds of the people. There are again the modern political leaders, the power-elites of C. Wright Mills, the ward members, the Sarpanches, the Panchayat Samiti Chieftain who have access to the new world of development through community development blocks, intensive rural development programmes and the integrated tribal development programmes. There are existing 'traditions' in education, agriculture, health practices which are anchored to the old value system on which the modern processes of growth and the new technology impinge. Sometimes there is the difficult task of reconciling the old and the new, the traditional and the modern, in different fields of personal and social life. How is the resultant tension and conflict being sought to be resolved and a new sense of identity forged? In brief how do the modern political process and economic development act on the ritual-based cultural matrix of the tribal world and its tradition-dominated socio-political culture? The tribal societies are faced to face with two worlds which are sometimes in binary opposition. The intuitive supernatural and the matter-of-fact rational; the mythological yesterday of glorious traditions and the real to-day with its degradation and poverty; ethnic syncretism linked to socio-economic discontinuities and the dream of a possible pan-tribal unity. Such problems are unavoidable in a society undergoing rapid transformation. That however generates an attitude of ambivalence both towards tradition and the modernisation process.

The confrontation between the old value-system and modern economic processes can be illustrated by the following two examples which the author studies in detail in the Santal society. The first relates to the modernisation of Santal agriculture. Santals happen to be one of the most acculturated tribal society and the extension methods in agriculture, the new techniques and package of practices have been better assimilated by them. Even in this society acceptance of the new technology and practices sometimes present certain problems. After all technology is not merely a matter of tools and equipments. It also

implies a particular intellectual and emotive structure. Modernisation of agriculture implies a growing complexity in inter-cultural operations. Seed has to be sown at a particular time, the application of fertilizer, weeding, etc. have also to be at specific and prescribed times. In other words, the farmer has to orient his mind to the needs of the time-sequence and duration. The Santals, like most other tribal groups, find it difficult to become a slave to the time-machine. Rarely the tribal is bothered about time and its flux. A whole village may spend a whole day running curiously after a wounded pigeon hopping away from tree to tree, with the fond hope to catch it when it falls. This may be what Huizinga in his *Decline of the Middle Age* calls the play-element in culture. *Man the homo sapiens* in the tribal world is more of man the player, the *homo ludens*. Lewis Mumford in his *Technics and Civilisation* rightly pointed out that the time-piece and not the steam-engine was the real father of the industrial revolution.

Right from the sowing of seeds to harvesting the Santals have a number of ritualistic festivals which are accompanied by appropriate songs, dances and feasting to propitiate the relevant Gods and Goddesses. One of these, the Eruk ritual, is celebrated before deweeding operation in the village Saree. It involves offering of fowls and rice-beer to Jehler Err (Mother Earth). The following invocation song is recited.

Let twelve seeds come out of each seed
Let not disease attack the seeds
Let not weed and grass eat up the crops
Let dark and heavy rain-clouds come from the sea and turn the Earth green.

This ritual is partly a vegetative and partly a fecundity ceremony. The Santals believe that proper propitiation of Gods and Goddesses is essential for good crop and crop failure is due to their wrath. In a year of crop failure an old man told this author that the Eruk ritual was not properly done and the crop started dying in September and there was not even a drop of rain from the sky. "They tried to save the crop by working a pump. Still there was no rain and the standing paddy crops finally died. Could they save the crop? No. How could they when Jehler Err wanted it the other way?" he asked.

Belief in propitiating Gods and Goddesses and beginning certain agricultural operations by

relevant worship sometimes affects agriculture adversely in another way. One Santal village had, after lot of extension work and persuasion, taken to hybrid maize. The fields were properly cultivated. The crop was coming up very well. But the Asadu festival was delayed. The village Manjhi had gone a foreignt prior to the festival to his father-in-law's house nearly forty kilometres away and there he lay very sick. He had not been able to decide, in consultation with the village elder, the date for Asadu and, as such, the festival had not been held. And nobody in the village would enter the field for deweeding as the Asadu worship had not been done and it was a taboo to do so. Some young boys who had read up to ninth and tenth class argued that the weeds had grown very fast and the fine maize crop was going to die unless deweeding was immediately done. They were described as "faithless" and finally the voice of the elders won. The deweeding was done only after Asadu but more than a fortnight's delay had considerably damaged the crop.

It is evident that the modernisation of agriculture - which demands largely inter-cultural operations sometimes, come into conflict with the ritualistic basis of agriculture. Here technology and ritual must mix creating a new system of ritual flexible and liberal enough to absorb the demands of the new technology. For instance, there could be greater adaptability in the timing of the festivals and the authority or agency who decides the date for different festivals.

In the sphere of water-supply a similar situation was witnessed in a Juang village. The villagers depended on drinking water from the running hill-stream for ages. Due to deforestation the hill-stream slowly dried up and the community development block dug a well. Initially the Juang villages were somewhat reluctant to use this new facility. When they eventually tried to draw water with earthen pots a number of such pots were broken because of their inexperience and word went round that an evil spirit or *Bonga* inhabited the well and that it was a sin to have dug up mother earth. It took a lot of persuasion and a physical demonstration of drawing water with aluminium buckets to prove that there were no *Bongas*. In another village a resourceful Block Development Officer utilised their own value-system by offering a worship to the *Bonga* at the well site and then demonstrating that thereafter there was no

damage to the buckets. On occasions of sickness, disease and death similar situations of confrontation between the old and the new have often taken place.

The tribal's pain-threshold is generally very high. He would not run to a dispensary or a doctor unless the matter is really very serious or he feels he is dying. It is for this reason that modern health practices and the dispensaries are not easily accepted by him. No doubt the old and traditional thing is slowly dying away under the growing impact of modernisation. But the *Qibaz* (spirit-healers) the *Jave* (the priests) still hold sway in many interior areas. The ritual performances in many tribal societies are extremely costly. This generates a cycle of poverty, indebtedness and more poverty. The ritual basis of agricultural festival as also of life-crisis festivals such as birth, marriage and death is slowly getting diluted and eroded under the modernisation process.

There was a time when social anthropologists and economists used to look upon the value systems of the tribal world as inherently and irrevocably opposed to growth and economic development. Luckily today there is a more rational approach to the subject and there has been a growing awareness among all concerned that in tribal social values and personality traits there are growth—positive as well as growth-negative factors and a proper design of development has to utilise the former and try to eliminate or side-line the latter. The tribal's love of life, zest for living, strong sense of community, lack of anxiety and an over-riding preference for happiness are positive factors that deserve to be recognised and utilised. There is a story, perhaps somewhat apocryphal, of an American agricultural expert waiting with his Indian counterparts at a river-crossing for the ferry. He found two boys sleeping in the shade of the banyan tree on the river bank. The time was ten in the morning and he asked them, step by step, through the interpreters as to how they should work, earn more, save and then go and enjoy. They replied that they have worked hard last 3 days and earned quite a bit. They told the interpreter to tell the expert that he wanted them to work hard, earn, save and then enjoy and that is what they were precisely doing then. Economists have often bemoaned the lack of the acquisitive instinct and the ability to save and re-invest among the population of the Third world. That is quite right but can we

totally ignore the extreme end-product of this process of growth? There are two groups of planners and developers. One would like this world to be a happier and better place to live in with other men in society and nature. Another group would like to make it an increasingly efficient engine for progress. We need to reconcile the objectives and strategies of the two groups somewhere.

A word about tribal education and its relevance for economic growth and development. The tribal's traditional education was never very formal. It emphasised community involvement and a measure of intense socialisation. Moral instruction was at its core and the techniques of instruction were also well adapted to suit the typical needs of that society. In brief, traditional education was supposed to make the child ready for the world which he was to face. This cannot be said to be true of the new education that has been taken to them. Emphasis is now on conceptualisation rather than on informal learning of techniques. They, on the other hand, excel in the ability to fabricate and assimilate techniques. Primitive education in the words of Margaret Mead "was a process by which continuity was maintained between parents and children. Modern education includes a heavy emphasis upon the function of education to create discontinuities to turn the child of the peasant into a clerk or the farmer into a lawyer, of the illiterate to the literate". From this point of view, the kind of education which we plan for the tribal societies in transition is of great relevance. Too much emphasis should not be placed on conceptualisation or formal learning. This education that is to be imparted should have more to do with the manipulation of objects and processes and learning of techniques. This is not to ignore or under-estimate the importance of the rational process and the need for developing logical thinking in the tribal mind. It is only to say that this need should be put to a later stage and should be slowly brought into operation by a process of gradualism only after the tribal has learnt a few techniques by the natural intelligence which he possesses.

The idea of good life is integrally linked to the relationship between the social order and the moral order. Writing way back in 1930 Franz Boas held that "it is much more difficult to speak of progress in any cultural activity" and that fundamental ethical attitudes have shown a "lack of change" (Boas: 1930). This was another way

of saying that in terms of historical evolution of societies, one could only speak of the development of technology and not of culture. The good and happy life which the tribal believes in is integrally linked to his view of culture which incorporates an emphasis on health and disease-free life, love of fun, a reasonable degree of freedom and leisure opportunities, an intimate balance between the individual existence and the natural, social and the supernatural orders. The emphasis is thus on balance between different orders of realities. It was Kroeber who had observed that there are three approaches that seem to yield at least a partial standard of what constitutes "higher" or more advanced culture. No doubt, one of these three is the cumulative development of technology and science.

The other two standards Kroeber proposed lead us into recognition of differences between the more urbanised societies and the tribal societies with regard to their view on the "true" and the "good". (Kroeber: 1948).

The first is linked to the criteria of magic and superstition. The visions and magical beliefs of the individual give place to rationalised scientific attitude in the quest for truth. The second criterion for progress was described by Kroeber as "the decline of infantile obsession with the outstanding physiological events of human life". The primitive, according to him, allows to obtrude into public recognition and the social order 'blood and death and decay'. On both these counts the tribal society could be said to be rapidly moving from the so called pre-civilised society to a literate civilised society. Even though the life-crises such as birth, attainment of puberty, marriage and the funerary rites are celebrated with great deal of realistic rigidities, slowly, with the spread of education, their importance seems to be getting eroded. The younger generation is no longer seriously interested in it. Nor are they interested in what they consider the expensive and time-consuming rituals which punctuate the agricultural cycle. The same thing also has happened to magical beliefs and superstitions. No doubt such beliefs still continue. Belief in witchcraft and consequential murders are still prevalent. But in terms of frequency of occurrence there a perceptible decline over the last 50 years. The acceptance of the natural order constitutes an integral element in the tribal view of life. The tribal working on the land does not set

himself in opposition to it. He works with the elements and not against them, is in harmony with them and not in conflict. There is no attempt whatsoever to conquer but to coexist. He depends on rain, sun-shine, the soil as a part of a benign mutual interdependence. Nature is not exploited. It is enjoyed with a spirit of humility, thanks giving and love. And the enjoyment is mutual.

The propitiation of the supernatural order which determines the moral order is also intense and intimate. There are significant contrasts in the thinking processes between the tribal society and other more urbanised societies. It is not merely in the modes of social co-operation or the use of linguistic patterns; it is also discernible in the personality-type and the general world-view, the latter meaning the "designation of the existent as a whole". This basic conception that the natural and the supernatural order, the physical and the moral order should remain in close and intimate co-operation and organic balance is integral to tribal's way of life and thinking.

The elaboration of the rituals, the songs and dances which accompany them and the invocation of blessings for the prosperity and well-being of the community as a whole, reveal the sense of intense community-participation and the regard for a moral, supernatural order that determines the fate of the social and physical order (Mahapatra : 1979).

The erosion of belief in rituals is linked to the awakening and intensification of a spirit of rationalise. Rituals depend upon an intuitive perception of reality by a mind attuned to such perception and an implicit faith in the efficacy of the activities associated with the ritual for solution of the life-crises. The foundation of such belief is an unquestioning faith that accepts things either because they have been handed down from posterity and are, therefore, sanctified by tradition or because non-observance of them is taboo. Rationalism impinges on this kind of unquestioning faith and starts asking disturbing questions. It is not satisfied by explanations readily offered. It would like to go beyond simple answers. Technology is the product and the expression of a temper based on such a logical frame of mind and is thus, in a way, directly inimical to primitive ritual. The confrontation between these two frames of mind, the two mental climates as they were, is evident in several

fields of economic activity and societal relations such as agricultural operations, attitude towards sickness, disease and death, divinations and the supernatural approach to medicine, political and social leadership and, above all, in attitudes towards life and death.

Such confrontation has a relevance for modernisation and development. Sometimes an entire village is face to face with such opposing forces. "When a village is faced with a suggestion of change, there exists a balance of forces. On one side of the scales are those forces which are against change—conservatism, apathy, fear and the like; on the other side are the forces for change—dissatisfaction with existing conditions, village pride, and so on. Successful community development consists largely of choosing those projects where the balance is almost even, and then trying to tighten the forces against change or to increase the factors making for change." (Jackson : 1966 : 30)

The art and science of development consist in discovering the modalities of bringing about an optimal balance between them or making the forces of tradition and heritage strengthen, through a well-conceived and well-directed process of reinterpretation of the tradition, the forces conducive to change, modernisation and economic growth. Lucy Mair suggests as a generalisation of wide application that "the conservative force of tradition is never proof against the attraction of economic advantage, provided that the advantage is sufficient and is clearly recognized. In the case of land it is abundantly clear that the emotional and religious attitudes towards it which are inculcated by native tradition have not prevented the development of a commercial attitude." (Mair : 1967 : 52).

The confrontation is equally in evidence between different sections of the same society—let us say, the traditional hereditary village leader and the now elected leader under the Panchayati Raj system; the older generation still immersed in the lore of the tribe and its sanctified heritage and the younger modern generation coming under the influence of the new system of education and social intercourse with outsiders. The tensions generated as a result of such confrontation between tradition and modernity and technology and ritual can thus be looked upon both as psychological and sociological phenomena. At one level it leads to the development of an ambivalent personality-structure

with one face looking to the supposed and imagined Great Tradition fortified in the belief that the present is only a passing phase of decadence to be suffered and what needs to be done is to reconstitute and revive the glorious trading; and the other face looking all the time to the pragmatic benefits of modernisation, the flow of economic benefits, the access to and the advantages of political power which it offers, in short, towards what Martin Oran called the "political rank-path".

The relationship between myth and rituals on one hand, and their relationships to personality and social structure have been variously studied by anthropologists. Monica Wilson, for example, emphasises that "rituals reveal values at their deepest level ... men express in ritual what moves them most, and since the form of expression is conventionalised and obligatory, it is the values of the group that are revealed. I see in the study of rituals the key to an understanding of the essential constitution of human societies." (Monica Wilson : 1964). Kirk connected them to two primary functions both of which had socialisation as their objective. "Apart from routine acts of propitiation and sacrifice rituals tend to be either rites de passage or connected with agrarian fertility. The continuation of social and natural regularity in more general ways accounts for other types (of rituals)." (Kirk : 1971).

The tribal ethos in Sumner's sense of "some of the characteristics, usages, insights, standards and codes by which a group is differentiated and individualised in character from other groups", is thus a very well-formed ethos. It had enabled him to take a fairly rational approach to the growing technology that invades his life today. But the capacity to pinpoint the impediments to the modernisation process is sadly lacking. The economic benefits of the process is gradually becoming clearer but even here also ambivalence remains, atleast on two counts. Firstly, whether the agency that usher in the benefit, namely the new political institutions are to be looked upon as intrusions and resisted or welcomed; whether participation in them should be total and enthusiastic or one should withdraw. Secondly, whether the new modes of leadership devoid of folklore and mythology should be accepted or the traditional leadership should continue to hold sway and command allegiance and loyalty. On the other hand, and because of this ambivalence, the so-called ritual basis of society and the Great Tradition have neither

been fully accepted nor acted upon by the rank and file. Thus neither the new technology and its ally the new political system and the leadership nor the traditional ritual and the leadership based on it has been able to bring about the very necessary rapprochement of reconciliation between the two opposing value-systems and forms of socio-economic organisation. Basically socio-cultural development and a new renaissance of economic growth and flowering of autonomous culture demand the capacity for corporate action and individual dedication. Neither of these determinants seem to be very much in sight.

Like most under-developed societies, the tribal society shows a typical inability to maintain an organisation. The capacity of a culture to maintain an organisation depends on its related capacity of synthesising and bringing together a large number of social values to the level of community-acceptance and participative action. The incompatibilities and contradictions within a culture which impede corporate objectives and actions are precisely also those that impede modernisation. The new technology is based upon what Banfield calls "the base of a moral familism". As he observes "we are apt to take it for granted that economic and political associations will arise wherever technical conditions and natural resources permit. If the state of the technical art is such that large gains are possible by converting the activities of many people and organising skill will appear from somewhere, organisations will spring up and grow. This assumption is wrong because it over-looks the crucial importance of culture" (Banfield: 1963).

Modernisation has its impact on the ritual-based social structure of the tribal world in several dimensions. The most important area of interaction between tradition and ritual has been the pattern of leadership. Political change in a traditional society comes slowly but it tends to affect almost all aspects of community life. The approach to life and death, to pleasure and pain, to self and the others, flow from certain given systems of value. These value systems are part of the cultural orientation of the community and are often deeply enshrined in the personality structure. The value systems in their turn are linked to a host of socio-economic factors, tradition and mythology, approach to disease and death, the view point on the natural and the super-natural and the nature and role of political changes.

The new political system which is like the new technology has not been able to throw up this capacity for corporate action. On the other hand, it has only resulted in either distorting or killing the earlier forms of corporate action in socio-cultural matters. This is a problem that has to be tackled at many levels so that the new technology and old rituals are brought together or nearer with a view to formulate patterns of human co-operation that would make corporate action both for economic development and cultural autonomy possible. At the moment, there is a growing dichotomy between the demands and demand for cultural autonomy and the ability for forge an organisation for economic and political development and social action. This only further alienates the elite (more particularly the political-economic elites) from the masses and tradition and result from the new demands of political organisation and economic activity. This may be looked upon as part of the complex process of the adjustment between the political-economic integration of encysted societies with the greater community around them as a result of the growth process, and the preservation of cultural autonomy. The dominant ethos of ritual structure is in conflict with new developments of secular democracy and technology. The tribal finds himself helpless in this new situation. He must perhaps discover a *modus vivendi* that will take him out of this impasse." (Mahapatra: 1977).

The confrontation of technology and ritual is not a simplistic factor. After all a technological system also tends to develop its own rituals. But ritual in the traditional religious cultural sense implies a host of symbolic functions which are kept outside the realm of logic and rationalism. The technological world, on the other hand, calls for less and less of intuition and more of reason, and ability to analyse and co-ordinate details rather than to take an intuitive world view. In his foreword to Paulo Freire's *pedagogy of the oppressed*, Richard Shurll referred to the "paradoxical" dual role of the new technology which according to him holds a hope for the future. "Our advanced technological society is rapidly making objects of most of us and subtly programming us into conformity to the logic of its system. To the degree that this happens, we are also becoming submerged in a new 'culture of silence'. The paradox is that the same technology which does this to us also creates a new sensitivity to what is happening. Especially among young people, the new media

together with the erosion of old concepts of authority open the way to "scope awareness of this new bondage." (Richard Shultz: 1972). The new political system and the new technology in the field of agriculture, medicine, education and economic development, therefore bring in value-systems and attitudes which are in direct conflict with the ritual-based puristic approach to life and reality. Technology also is secular in its impact just like political democracy or the Panchayati Raj.

In the words of Roy Burman "The crisis of modern man has made growing numbers of tribal elites conscious of the fact, that there is no single great tradition to be emulated. This has led to the search for new meaning in their age-old tradition, to invert the same with the ethos of universalism and to project tribalism as an alternative great traditions" (1972s).

David J. Siddle (1978) has drawn our attention to some of the inadequacies and pitfalls in planning rural development and tribal development in the third world. According to him "these are 3 major factors which militate against the creation of proper conditions for development and modernisation. These are" errors associated with demands made by Governments for short-term political solutions to intrinsically long-term problems; the errors deriving from an overwhelmingly self-confident belief in the of the Euro-American approach to development in which progress is equated with urbanisation and industrial growth and the mistakes associated with a lack of knowledge concerning patterns of life in rural areas."

What is required, on the other hand, is an appropriate awareness of an sympathy for that world, and an apprehension of the process of change in rural and tribal areas in the Third World so that we understand clearly the impact of planned, urban-oriented modernisation on the structure of rural society and economy. The time is very opportune for the reassessment. Many social scientists, both Marxist and Capitalist, have worked hard to point out that there are discernible distinctions between the rural and urban. They have tried to do this by emphasising the existing class differentiation and economic motivation as also the growing linkages between the urban dwellers and rural dwellers. It exposes the attitude of planners that what is basically intended is not so much the development of rural societies as their incorporation in the metropolitan milieu. The recent emphasis of

research on the village level is a step in the right direction but it has to be remembered that the village only one of the levels of focus for a proper study of rural—tribal development problems. After all the village does not exist in isolation and individual settlement is one element within wider vertical and horizontal structures. The socio-economic reciprocities and exchange mechanisms define the vertical structures while horizontal structures are revealed through settlements, linked by kinship and the associated evolutionary process of colonisation. In the words of Siddle "While we must obviously continue to work towards the alleviation of physical distress, uncertainty concerning the long-term viability of our own economic and social system makes it possible to take a more sanguine view of the rural systems within which seven-tenth of the population of the world still operate. The long-term stationary equilibrium or the low-level equilibrium trap within which many rural economic systems in the Third World are thought to be contained may require a less patronising attention. Contained within some of their structures are complete adjustment mechanisms and sophisticated calculations of man-environment interaction, from which we could do well to learn. Radical new approaches in the social sciences are essential if the problems of rural (tribal) as opposed to agricultural are to be faced".

While the transformation of tribes into castes has lost force and the nation has taken pains to preserve the autonomy of tribal cultures, the logic of socio-economic transformations have been breaking down, modifying and re-orienting traditional tribal cultures. The emphasis on tradition, ideological or counterfeited history and cultural exclusiveness have been given a sharper focus by the power-elite in the context of socio-economic transformation. This appears to be a kind of resurgence or perhaps, more appropriately revivalism. But one has to look deeper both into the social structure and the emerging social stratifications to understand the nature and direction of this new emphasis on cultural forms. Myths, symbols, oral literatures, religious beliefs, traditional values no longer remain as they were; they are revised, reorientated, sometimes even without conscious design or sense of direction. Interest in culture becomes often vicarious, grousious, a part of the search for the new dynamics of political rank-path. And yet, superimposed on all these, is an awareness of the essence of community, the small community.

This itself surely holds hope in a world of growing-impersonalisation and loss of individuality due to the large size of organisations. Discussing the ritual process not merely as a structure but also as an infrastructure, Victor W. Turner refers to their role in achieving communities which is basically an egalitarian relationship between persons stripped of status and property. In discussing the formation of Franciscan Order in the Middle Ages he quotes M.S. Lambert to say that Francis was a "Supreme spiritual master of small groups; but he was unable to provide the organisation required to maintain a world wide order" (Lambert, Franciscan Poverty, 1961). This is where the tribal culture as small community culture can serve as a basis. Martin Buber observed in 1966 : "an organic Commonwealth and only such a commonwealth can join together to form a shapely and articulate race of men will never build itself up out of individuals, but only out of small and even smaller communities: a nation is a community to the degree that it is a community of Communities" (*Paths in Utopia*). It has been the greatness of the Indian nation that it has always sought to create such a living growing community which is in essence a community of communities.

Secondly, among different models of integration of tribal culture and society with the larger society so long emphasis was placed only on the theory of a melting point with constant give and take and cross-cultural co-existence. The time has come also to emphasise the inherent search for universal human values in their own cultural matrix by the tribes. The search for great tradition, for abiding historical values transcending the demands of here and now, point to this. This is a positive sign for cultural growth and efflorescence *viva-vit* the arid confrontation or withdrawal of earlier years.

Thirdly, and this is most important, there are signs of an emerging force of counter-alienation in this new search for cultural roots by the tribal groups. Over-emphasis on ethnicity leads to a drying-up of sources; an anomic grows in the heart. Tournier (1971) has rightly told us that "today it is more useful to speak of alienation than of exploitation: the former defines a special, the latter merely an economic relationship. Alienation means cancelling but social conflict by creating dependent participation. Ours is a society of alienation, not because it reduces people to misery or because it imposes police-restraint, but because it reduces, manipulation and enforces

conformism." A genuine awareness and growing interest in tribal culture will keep our commitments to universal values which emphasise community, instinct and imagination and help us look even on cities as a conglomeration of neighbourhoods or as Buber's community of communities with varying cultural patterns, beliefs and value-orientations fitted into its mosaic.

Examining various devices which may reduce, and even prevent, social confrontation and conflict, Coser in his *The Functions of Social Conflict* suggests that mass culture and popular entertainment are primary means of diverting aggression from regional sources of institutional conflict by providing for vicarious, safe release of hostile impulses. Institutionally, therefore, art is in the nature of a safety valve to release tensions. Directly and indirectly art helps bolster the morale of groups and helps to create a sense of social solidarity and unity; it may also function as a nucleus for organising social actions and social change. The aesthetic need is as important in a community as those of hunger and sex, even though they are different from the mechanisms of hunger and sex in that they do not involve consummatory activities to relieve internal tensions. They are non-cyclical; they occur as gratuitous satisfactions without the necessity of seeking them and without any demand for instrumental action. The role of art in a primitive community is thus to identify a cultural field. This is something akin to what Marcuse identifies as the sub-culture in present western societies existing as the Great Refusal or the posture of defiance. In western societies avant-garde art has been called a negative culture and as "the radical negation of a general culture by a specific one" (Benito Poggioli—"The Artist in the Modern World"). It has also been called as "Contra-culture" by J. Milton Yingler. One extreme mode of expression among artists is Bohemianism. The continuity and universality of a culture improves in a small community and rules out cultural conflict by way of formation of sub-cultures and contra-cultures. This is all the more the reason why culture as the mode of living in society is appropriately confined to small communities. A homogeneous culture can rise only in a small community.

One good thing about the Euro-American conception of fine arts and culture is that with its development perceptions were transformed so that the anti-facts, dances, songs and the myth of people all over the world whose forms expressed aesthetic qualities became "visible". And

meaux has rightly pointed out that "before the coming of modern art no one saw a Khmer head, still less a Polynesian sculpture, for the good reason that no one looked at them" (*The Voices of Silence*, page 603). It has now become possible to conceptualise various intricate aspects of primitive culture so that world culture may benefit from it. For, to participate in the work of art is to re-assert its existence as object rather than as individual personal expression. This is apparent from the various studies on the theory of diffusion, by Paul Winger in his *Primitive Art: Its Traditions and Styles*. The small community makes possible these expressions to be preserved in a unique and authentic way. The distortions are less, the genuineness and true-to-life character still predominate. This makes preservation of the authenticity of culture and its transmission a simpler and natural task. This is all the more reason why in a country which has the philosophy of unity in diversity, we must re-emphasise the need for maintaining

small communities and their culture and allowing them to grow in their own style.

Technology and tribal culture are very much in need of each other today. At the heart of each is an emptiness. A cultural anomie and blankness on one hand; stark and unmitigated poverty and lack of formal organisation on the other. The former explains the loss of the sense of community and the desperate search for alternatives in the West: "Communes rural and urban; voluntary primitive; organic homesteading; extended families; free schools; free clinics; handicrafts co-operatives; community development co-operatives; Gandhian ashrams; neighbourhood centres; labour gift exchange". (*Where the Waste Land Ends*: Theodore Roszak 1972). May be if we appreciate the sense of traditional little culture as the bond that keeps man together in small communities some day, as our economic growth proceeds, we won't be required to trudge the same troubled way as in the past Centuries.

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BASIC ISSUES IN TRIBAL DEVELOPMENT*

Dr. B. D. Sharma

Why Tribal Development ?

All communities in the world must have started at, more or less, the same point, passed through the same phases of evolution. Then, what is so great about tribal development? Why should we talk about tribal development as something special? In a way, these are valid questions for which we will have to seek answers in the new context.

A tribal community represents an earlier stage of our socio-economic life. Every stage in the socio-economic progression of the human race strikes a balance of three basic elements, viz., organisation, natural resources and technology. Each tribal society represents one such stage within its own frame of reference. Any change in any one of the three elements of this configuration leads to a sympathetic change in other two elements. The changes continue till a new state of balance is reached. Thus, as technology or population threshold or resource-base of a community undergoes some change, a process of socio-economic change is initiated which in due course could lead even to complete transformation of that community. The process of this social and economic transformation is a universal phenomenon, though the pace of change has been different at different times in different communities.

In the earlier stage of human society, the pace of change was very slow. Let us take the case of 'gatherers and hunters'. The human society was in that stage for perhaps more than fifty thousand years. The second stage was that of shifting cultivation or preagricultural technology.

Some communities, however, moved in a different direction and became nomadic pastoral groups. These developments took place about ten to fifteen thousand years back. This second stage has continued for thousands of years in different parts of the world. Agricultural civilization is variously estimated as five to eight thousand years old. We are now living in a new age of science which started just about 300 years back with the scientific and industrial revolution. This is an unprecedented event in human history.

Socio-Economic Transformation—A Broader Frame.

We are all in the throes of an incredibly swift change. Some nations in the West appear to have completed the first phase of transformation. They are perhaps now on the threshold of a new post-industrial phase whose outlines are not fully clear as yet. We are, however, still in the earlier stages of this transformation. The full logic of the new industrial-based society in our context is not quite clear. What is happening is that the model of the western world somehow has been accepted as the exclusive version of the industrialisation process. But as certain basic issues of socio-economic transformation are coming to the fore in countries like India and China, where the socio-economic matrix is entirely different from that in the western countries, those models are proving to be inadequate and simply not feasible. These questions relate to the transformation of the larger national economies.

The problem of the tribal people is a sub-national issue, particularly in the context of our

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country. We may, therefore, concentrate on these questions which are relevant to the specific context of these groups. So here are some communities which are in the earlier phases of development compared to other communities in our country. Some of them are gatherers and hunters; a substantial number amongst them comprises of shifting cultivators; a large majority of them are now settled cultivators with somewhat earlier forms of technology; a few have got into the whirl of new industrial and urban systems as well. I am purposely avoiding terms like 'backward economy' because they are value-laden. Ours is an agricultural country. We are tending to get subdivided into two or more parts—the industrial India, the urban India, the rural India, the 'other India,' and so on. We really do not know as yet even the outlines of the final steady-state form of our national life.

A Small Balanced System

Let us consider a small self-contained group, a tribal community—as we usually call these groups. It may be at shifting cultivation stage or at gathering and hunting stage. In each of these cases, we will find a balance amongst the basic elements of their economy, viz. organisation, natural resources and technology. Suppose a new technology becomes available to this group either as an innovation from within or by personal contact from outside. An important implication of this development is the possible alternative use of natural resources. The new technology may also have its own logic in terms of social organisation or economic organisation, and so on.

It may be noted here that an important basic characteristic of a modern society is specialisation of functions and division of labour. This leads to rise of increasingly complex organisation. Higher the level of specialisation stronger will be the organisation. A large organisation is necessarily stratified. This stratification may have different consequences for the social and economic life of the people depending on their policy. But stratification is inevitable in terms of skill-endowments for the people. For example, a complex system requires professors; it also requires labourers. It is doubtful if every labourer can assume the role of a professor even though many social philosophers insist on every professor assuming the role of a labourer for making their life fuller and meaningful. In an Ashram the professor may be required to do physical labour for two hours a day. The

labourer in the Ashram could also come up to the level of professor by active participation in the day's deliberations. Nevertheless, the economy as a whole is very much stratified in terms of the skill endowment.

How the large variety of skill endowments should be 'priced' is a different question. Even in the socialist countries this is a live issue. Skill stratification has some relationship with economic as well as social stratification. The difference between the highest and the lowest may vary considerably from one situation to another. There may be some apparent inversions as well. For example, some skills like motor driving may be highly valued in one country and may be considered low in another, and so on. The simple fact is that all specialisations in a system have to be logically inter-related in terms of their skill-levels. In this process, they tend to get stratified.

When the benefits of new science and technology, which is gradually permeating all affairs of human society, reach a simple society, a process of social and economic transformation sets in. This process brings in its wake a host of problems. The United Kingdom provides a laboratory case of social and economic transformation as a result of a continuous series of scientific and technological innovation over a period of nearly three centuries. The entire society has undergone a complete transformation. The U. K. and also other European countries, had the advantage of a beginner; they were in a way as we will see presently almost closed systems; and their transformation was supported by the global resource-base which they could command during that crucial period. The world economy became increasingly dualistic. The Europeans were at the zenith of their political power who comprised the higher section while the rest of the open world was forced into subjugation. Their economic transformation was impelled by the phenomenal progress in science and technology which was all internal to their system. They did not experience any adverse external forces. In fact, it enabled them to strengthen their economic base at the cost of other groups. The transformation process was made much easier since its adverse consequences could be transferred with impunity to their dependencies.

The entire Western world, thus, got transformed from an agriculture-based to an industry-based economy. They are now in the next phase of

transformation from industry-based economy to a post-industrial service-oriented economy. The big industrial production capabilities already established in the west and new 'robots' are increasingly disengaging the man from both the primary and the secondary sectors. Bulk of their population is now engaged in the tertiary sector.

There are some other significant developments also. The resource-base in many of their erstwhile dependencies is no longer under their command and is increasingly getting out of their easy reach. Therefore, some of them are facing problems in maintaining sustained growth. For example, the U. K. is said to belong to a category of poorer advanced countries. On the other hand, countries like U. S. A., Canada, U. S. S. R., Australia have extensive natural resources of their own and have no problems. The U. K. can expect to take advantage of their resource-base now on trade terms unlike the early days of its industrialisation when these continents comprised physical expansion of its economy. Therefore, today U. K. is not in a position to maintain the economic status of its people which it could do earlier using the extensive resources at its command. Similarly, countries in the western Europe, with some exceptions, are also now finding it a problem to sustain the structure which they developed with reference to the overall global natural resources. The developed world itself is getting sub-divided into two groups depending on the natural resource-base of each country.

Progression From Simple to Complex

In the context of this analysis, it is clear that the first important fact about the contemporary tribal situation is the socio-economic transformation of a simple system into a complex one. It has its own logic in relation to technology, organisation, resource-base, economic system etc. The second aspect of the tribal situation is the juxtaposition of the traditional communities with other communities. Even though the two facets, i. e. juxtaposition and transformation significantly influence each other, conceptually they are two independent phenomena. For example, many movements in tribal societies are spontaneous and are symptomatic of a process of internal change and autonomous transformation. Some people in Nagaland are not satisfied with Statehood and are working for separate nationhood. Some sections of people in Chhattisgarh are working for a separate state. Their urges for separate political identity can be traced partly to the process of autonomous

transformation and partly to the new contacts with other communities. As a new political or administrative unit is established, to some extent, the contact with the larger state or the nation as a whole is acquiring a new frame. The socio-economic transformation to some extent becomes amenable to internal adaptation. The processes of transformation operating in the larger frame can be checked and regulated within the smaller frame so that they do not overwhelm the people. This has been the logic underlying the provisions of the Fifth and the Sixth Schedules in the constitution.

Not all change is spontaneous and internal to a society. It is also induced depending on the intensity and the quality of contact with other societies. Therefore, there is an attempt to regulate and direct the induced change by influencing it at its very sources, viz., the point of contact with other societies. In the national frame, it may appear as a conflict situation. Both the national and the local perspectives have their merits and demerits. Our entire nation is undergoing structural transformation; each one of us is facing problems arising out of this fast change. A significant but unhappy facet of this change is the emergence of a dualistic structure in our society. The same dualism is also appearing in the tribal societies. When we speak about the problem of exploitation of the tribal communities, basically they are the problems arising from unregulated processes of socio-economic transformation. So we must analyse the problems and issues in relation to tribal development with reference to these two dimensions viz., (i) socio-economic transformation as a spontaneous process and (ii) consequences of juxtaposition of the tribal communities with other communities.

The problems of socio-economic transformation are not peculiar to the tribal communities. The processes of socio-economic transformation are informing our whole nation as also other nations like the United Kingdom or China. The problems arising from these processes, however, are specific to each family and individual. The pace of change in each case may be different. Nevertheless, in my view the fact of juxtaposition of the tribal communities with other communities is a critical aspect of the tribal situation which is influencing the quality of this transformation and has far-reaching consequences. I would prefer to examine this aspect in some detail here.

In a situation like ours, the whole economy can be considered to be divided broadly into three economies. One part comprises agriculture and allied sector. This section forms the backbone of our economy. In any foreseeable future, the economic system in a country like ours or China cannot but have agriculture as the primary sector. An average Indian is destined to be a cultivator. Whatever may be the contribution of new science and technology, this is a logic of our situation. The second part comprises the industrial; the commercial and a large variety of service activities which together may be termed as the modern sector. This sector occupies the top position in our national economy. The third part represents the lowest groups. It comprises people who do not belong either to the organised sector in the top bracket or to the agricultural sector. They form the substratum of our new socio-economic system. These are landless labourers, floating population in the urban areas and so on.

Thus, instead of a dualistic two-way classification of our society it is preferable to understand the new situation in terms of this three-way classification. The process of transformation in our country has been initiated from above. It is envisaged that all sections of society will finally become a part of a fully organised system, the beginning having been made in the present-day modern sector. This modern sector will gradually subsume the entire economy. This is like building of Kailash Mandir of Ellora. As we are building our national economy from the top, the organisations at the top are multiplying phenomenally. This process has serious limitations and far-reaching implications. This approach itself is one of the most important reasons why we are not able to make a significant dent in the basic problem of poverty and deprivation. It is also having a big fall out in the form of inflation which is enriching the highest groups. As the entire national system is subjected to this process, the subsystem of the tribal economy cannot remain uninflected. There is growing interaction between the two. Consequently, the tribal communities are also experiencing the impact of similar forces.

Facets of Socio-Economic Transformation

There are three aspects of transformation of tribal communities, or for that matter transfor-

mation of any community.—(i) politico-social transformation, (ii) economic transformation, and (iii) cultural transformation. It is not my case that these three are mutually exclusive. In any social situation, there is a continuous interaction amongst all the different aspects of life. The relative importance of these three elements will depend on the specific context and the central forces propelling the process of transformation. It is important to note here that the tribal communities in our country are experiencing fast change in all the three respects. We will consider these three facets of transformation separately.

(i) Politico-Social Transformation

Let us start with politico-social transformation. The politico-social transformation, as I will try to show, can be forced on a people. For example, as soon as a new administrative system is superimposed the village community is in a disarray. Our country has gone through this traumatic experience in the early days of British rule. The village communities, which had existed for millennia and which represented the quintessence of the wisdom of our national life collapsed once new centres of politico-administrative power were set up. An external police force was organised; an external revenue administration was created; alien forms of justice were introduced with the establishment of new courts of law. Eastern provinces had the distinction of having a new class of landlords also. Thus, when the traditional land system was extinguished through permanent settlement, the very base of the rural society was knocked out. I will prefer to call this as politico-social transformation because not only the village community lost the political power but even civil matters went out of their hands in favour of alien courts. It was no longer the village community which was deciding how their succession should be managed, how their land was to be managed, and how their disputes were to be settled. For each issue there were different authorities external to them. Through this new politico-social system a sudden change was superimposed on the traditional societies and they could not but collapse.

The tribal communities, were spared this experience during that period for a variety of factors. In the first instance, there was severe resistance to this change in Chhattisgarh. In the meantime, the British had also learnt from their experience in other areas that all was not well with their new system. However, the greatest

saviours of the tribal system was inaccessibility. Take the case of forests. The forests were formally reserved a long time back in the 18th century. But the tribals living in the remote interior areas did not feel the impact of that reservation till quite late thereafter. Even now if a tribal is asked about the status of forests, his instinctive response is that 'the forest belong to us'. He does not know that the forests have been reserved by the State now for a long time. He did not know that whatever formal proceedings were initiated at that time in the name of reservation would finally lead to, in a way usurpation of his property. The usurper in the case happens to be the State. And all States respond in a similar fashion. When in Independent India the State stepped into the shoes of its British predecessor it did not lose its grip on the forest resources.

Similar processes are operating in relation to other aspects of the politico-social life of the tribal people. The tribal societies today are facing tremendous forces leading to fast politico-social transformation. The pace of transformation is directly related to the pace of development of communications and of infrastructure. Some elements in this transformation are decidedly not only adverse to the interests of the tribal societies but are also against the long term national goals of a decentralised democratic polity. Therefore, here is a case of negative co-relation between development and the desirable directions of transformation. Faster is the pace of our national development, greater is our effort for development of tribal areas. This is leading to greater interference with their traditional autonomy. Finally, faster is the decline of the politico-social autonomy which these communities have been enjoying for ages. This is the biggest adverse implication of contemporary development plans which the tribal communities are facing. Their autonomy, which was *de jure* extinguished during the British period except in the case of Sixth Schedule areas, is not being *de facto* terminated. These communities have yet to discover the meaning of new democratic forms.

(ii) Economic Transformation

The second facet of the tribal situation is the economic transformation. As we have discussed in relation to other communities, economic transformation is a comparatively slower process. One cannot order economic transformation as suddenly as the politico-social change. We cannot say that here is a plan for instant transformation of an

agricultural economy into an industrial economy. We have been working for a fast transformation of our national economy itself. An impression was created in the Second Plan as if industrialisation was the panacea and it would transform the face of our country. So far as the structure of our economy is concerned, after more than 30 years of planning we are there where we were. The secondary sector has not grown in relative terms. Moreover, there is no hope for this in the wake of new technologies severely restricting manpower inputs. The tertiary sector, however, has got inflated which has doubtful productive potential. Economic transformation is really a difficult task and is an extremely slow process. However it is not my premise that this process cannot be planned or its pace cannot be quickened. If it was so there should be no need for planning. I am a firm believer in planning and I hold that structural change of our economy has to be rigorously planned. But it cannot be done without due consideration for the basic parameters which should be clearly identified so that planning can be come realistic. The same holds for the tribal economy where the task is much more complex and difficult.

(iii) Cultural Transformation

The third aspect of the transformation of tribal societies is cultural. Let me dispose of this issue first. There is much concern in the literature on tribal affairs about preserving their culture and allowing them to develop according to their own genius. I don't believe that much can be done in this regard in the way we think, for example, of economic change and development. Culture is something which cannot be ordered about. Let us consider what is going on in our own homes. Can we order our sons that they should put on dhoti? I am a strict vegetarian but my son may prefer to become a non-vegetarian. Again, I do not hold that nothing can be done in this regard. But here we face serious limitations. The only thing which we can do in relation to cultural transformation is to ensure that certain adverse influences which tend to operate in a suitable way are identified and checked. Moreover, count ralling forces can also be engendered through within certain limits.

A concrete case will illustrate this point. Drinking is a part of the cultural milieu of tribal societies. It also has some economic implications. It is well-known that the state intervened in a big way in this aspect of tribal life in middle

India soon after the establishment of British rule through its liquor policy. The premise in this case appears to have been that the cultural and the economic aspects of drinking could be kept apart. In view of their cultural tradition, the state could not impose restrictions on consumption of intoxicating drinks. But it resorted to commercialisation of the preparation and sale of liquor. The British India was the first to start this practice which was quickly adopted in the Indian States. This practice was continued without any change after independence in almost all States.

With the establishment of stills for manufacture of liquor and their outlets for sale, the social custom of drinking became a vital point for application of undue pressure by commercial interests. Thus, drinking became a source of revenue to the state and of quick earning to a few contractors. This was in contrast to the earlier situation. Preparation of liquor in the traditional way is not an economic activity in the usual sense of the term; it is a part of the overall social dynamics of the tribal people. For example, before liquor can be prepared at home one has to deal with his wife; while consuming the home made brew, one has to share it with his friends; then there are a host of rituals at all stages. So drinking in the traditional setting, as a part of the cultural milieu, cannot be an isolated act; consumption of liquor cannot be unlimited and out of context. There are numerous checks and balances. But the moment a liquor shop is established, all cultural elements associated with drinking disappear. One is no longer required to brew his own drink. Therefore, there is no check of the family, particularly the wife who is always watchful about the stock of rice for meeting the family requirements before she would allow brewing. Now, one is not obliged to share his drink with his friends. One can just go to the shop and get his bottle; the vendor is too ready to oblige him to any extent for just one entry in his account book which, at that moment, has no meaning to the customer. So he can have his drink to his heart's content.

Here lies the genesis of economic disaster of the tribal society in middle India. No other single factor in the tribal economy has done greater damage to that society. The first step of the State in commercialising drinking was apparently innocuous; but it has ultimately led to their economic ruin and in many cases social

disorganisation. If you discuss in Delhi or in high societies anywhere such an issue, a supercilious attitude is usually taken with remarks 'Any, let him enjoy, what is wrong in drinking'. The basic economic issue associated with drinking in the non-traditional setting and the trap in which he is forced may not be even appreciated.

The issue is not that of just drinking or allowing an ordinary economic activity of preparation and sale of drinks on demand-supply principle. In this case, the single step of establishing a liquor shop in the village upsets the entire traditional culture setting of the people. This fact may be vehemently questioned by vested interests. This notorious activity can be described by them in fine words quoting from the scriptures. For example, it can be claimed that the State by adopting this policy is merely taking steps to provide a wholesome drink by regulating its manufacture and ensuring the quality of preparation; there is no compulsion of any sort—it is for the individual to drink or not to drink. If a demand is raised by the village people for removal of these shops from their vicinity, it is dubbed as bootlegger's ploy or prohibitionist fancy. The fact is that it is neither the people appreciate their own weakness for drinks and would not like to conceive a great temptation within their easy reach. They would prefer to be guided by their traditional cultural norms which favours enjoyment with moderate drinking shared in a congenial setting. It is not realised that drinking in the traditional setting cannot cross certain well-accepted limits and cannot become disastrous.

Similarly take the case of traditional tribal dancing or their marriage custom. People go to the tribal areas, usually take a container of drinks, offer it to the villagers with the request for a dance performance. The tribal belles and boys turn out, lured by the drinks and give a dance performance. Some villagers may get used to these requests because of their easy access. Some of them may even venture to give tribal dancing a professional base. Now let us understand the real nature of this transformation. Does it in any way promote tribal culture? The reply is a categorical 'No'. These transactions can in no way be considered to enrich tribal culture. The real tribal dance is in the idyllic setting of rising moon when the tribal boys and girls gather in an open ground after their day's work, they are in communion with nature—their

hearts throbbing, their feet moving in rhythm with the beats of their drums; their songs recreate the living eternity of their tradition. This is their traditional dance. Can it be made to order for money? Money can only pervert their culture leading its decay and demise. That is why, I have been saying that nobody should be allowed 'to pay his way' to a tribal dance. One must become a part of their cultural setting; only then he will be able to establish an emotional communion and enjoy the dance in the real scene. Otherwise he is just satisfying his idle curiosity by commanding a dance performance for cash payment. This is worst form of interference with the culture of a people by use of authority and money power. They are guilty of commercialising the cultural milieu. In this context it is not possible to reconcile tourism as a part of tribal development programme. Can we consider commercialising cultural values of a people by tourism as development? The answer is again a categorical 'NO'.

The logical conclusion of the above discussion is that so far as cultural aspects of peoples life are concerned, the only part the State can and should play is not to initiate or support those processes, as a part of the larger planning thrust, which, directly or indirectly, may have the potential of becoming catastrophic culturally.

Spontaneous cultural change within a community is a well-known phenomenon. Cultural change can be initiated by numerous factors including education. One cannot avoid it, one should not avoid it, one should not wish it to be avoided. We have all regard for the *Varnashrama dharma*; but none of us would like to go back to the Vedic age. The life has to be perceived as whole; the life style of every period represents a fine balance amongst a variety of elements, all of which can not be recreated in the same fine proportion at a later time. Individual elements as part of the system may appear to be ideal, yet out of that context they may lose their significance or even may become unrealistic. For example, the tradition of *Kavaprestha* and *Sanyas* presupposes existence of extensive forests and a much smaller population. The fact that the population in our country has grown phenomenally cannot allow us to emulate Vedic ways in modern times. We have great regard for those days but the time has changed. A process of gradual change is continually operating. We have to accept spontaneous change as a part of life.

Basic Issues in Economic Development

Now let us consider the economic aspects of our life. This is where something can be really done; and this is where a decisive intervention should be made. In the economic field it is possible to super-impose some elements. The changes in the land ownership provide the most telling example. An entirely alien concept of land ownership was super-imposed in our country by the British in the first phase of their rule in India. This process is now going extended to the tribal areas which were excluded by them for a variety of reasons. There are some vestiges of communal ownership but many of them merely pay lip service to it; the general milieu in our country is in favour of individual ownership. Communal ownership in the tribal areas is, therefore, under great pressure. For example, institutional credit is usually available against individually-owned land. In the North-Eastern region bulk of the land continues to be communally owned. So, there is an impasse, on the question of credit for development of land in this region. The various Committees have suggested that the concept of individual ownership in land should be accepted for this region as well and it may replace the community ownership so that individual cultivators can take advantage of agricultural credit facilities and improve their lands and productivity. Then, there is also the question of individual initiative. It is generally held that unless individual acquires title in his land through individual ownership economic transformation is not possible. I do not accept this premise. Establishment of egalitarian social order is our national goal. Therefore, finally, private property will have a minimal role; it should rather disappear. But in the process described above private property concept is getting super-imposed in the tribal areas just to suit our institutional frame. Like their peers in the early phase of development in the rest of the country the tribal elite is for this change in the land ownership concept primarily because it serves their interests. These aspects are not getting due attention since the elite at the national level and the elite in the tribal communities have a common cause.

The basic question in tribal development is to guide the process of socio-economic transformation in such a way that while the benefits of new advances in science, technology and organization can be assimilated by the community, deprivation does not set in for any section thereof and the egalitarian ethos is maintained.

With a view to bring the various issues into focus I will take the ideal socio-economic frame of a tribal community. Most of the tribal communities have an egalitarian social structure. There are no rich people here and there are no poor people either. I may concede that this is an ideal and such an ideal situation may not exist in all tribal communities. For example, the tribal situation in West Bengal is entirely different. But this is the traditionally accepted structure of a tribal society. This is acceptable to the members of these communities themselves as an ideal form of their society sanctified their tradition. Any change in this regard is taken by them as deviance from that ideal. This is in contrast with the narrow caste Hindu system which accepts hierarchy as a natural order even though the broader philosophical Hindu frame accepts equality as intrinsic. Therefore, the phenomenon of poverty is nothing unusual for a caste Hindu. But this is not so in the tribal system. If there is high degree of inequality in the tribal society it is taken as an abomination of running down of their traditional system. If such a frame is generally acceptable to the people, the plan of action will have to be different from the one where inequality is accepted as normal. In those societies where elements of egalitarianism are still present and are strong, all measures should be taken to preserve them.

Juxtaposition of Two Different Systems

We have traced earlier two sources of change—(i) spontaneous, and (ii) induced. An important source of induced change is contact with other groups and systems. This is what we will consider in detail now. When two different systems come in contact with each other, its outcome depends on the quality and also the intensity of contact. One thing which every tribal community faces as soon as it comes in contact with the modern system is the erosion of its politico-social autonomy. The modern system is incomparably strong. Therefore, in the new contact situation, the tribal society is rendered extremely weak and completely helpless. The people do not know how to protect their economic rights. With the erosion of the politico-social autonomy, the society is unable to provide that protection even to the civil liberties of its members. This is an important aspect which has to be kept uppermost while considering planning for the change and development of the tribal people.

Let us consider some concrete examples. When the new industrial complexes were established, for example, in Baladila or Rourkela, the local tribal communities did not have any say either in the general decision or details thereof. They were not in a position to do so. When land was acquired for these projects it was the Patwari record which became the conclusive evidence about the ownership. The compensation of tribal, therefore, depended on the fact whether his name was recorded by the Patwari in his book or not and on what area. Since no records were maintained in some of the tribal areas, it was presumed that much of the area was open and free land. Therefore, it could be acquired by the Corporations without compensation. So we find a peculiar situation here—the administration turns out to be the grabber of tribal land. And in this case, it is also the administration which is the final arbiter about the issue whether land has been grabbed or not. It is common human failing to support one's own case. Consequently, the tribal's rights got largely ignored. He got a very raw deal while everyone else was enjoying the fruits of development. It is these situations in which the tribal finds himself completely helpless and he tends to become an extremist.

The second crucial aspect of the new contact is the qualitative difference in the structure of the two systems. All modern systems have a formal frame while the tribal social system is an oral and informal one. To a tribal his word is final. To us in the modern system, word has almost no value; word is non-entity. We believe only in something concrete—the written word itself has to satisfy some conditions; it must conform to the rituals of the new system. If it does not satisfy the law, it has no value.

A simple example about marriage, which is so personal, intimate and sacred to every individual, will illustrate as to how the quality of our civilization has been compromised in this process of the decline of oral tradition. Let us trace the evolution of the form of marriage from the early days, say, of tribal marriage to the modern times, that is, the so-called civil marriage. The form of a tribal marriage is very simple. Tribal marriage essentially comprises exchange of word between the two partners. Once the promise has been done, the marriage is complete notwithstanding whether the associated rituals have been performed or not. Once a boy and girl in the tribal society established a separate hut and begin to live together, the community accepts them as husband

and wife. And that is the end of it. According to the tradition of Gonds of Bastar, a couple must perform the rituals associated with the marriage, including a feast, before their first son gets married.

Here is the tribal marriage where the word exchanged between the two is the only necessary condition for marriage and is the final seal for its legitimacy. It is this psychological frame of tribal belief which is taken advantage of by outsiders. When a non-tribal boy and a tribal girl become intimate, the tribal girl is satisfied with a promise—an exchange of word between the two is sufficient, nay sacred, in her innocent world. And thereafter they begin to live together as husband and wife as is customary in the tribal society. But the perception of this living together is entirely different for the other partner. While the girl naturally believes that she is married to the boy, the outsider knows that he is just living with her with no obligations whatsoever which usually go with a religious or civil marriage.

The next stage in formalization of marriage is the Caste-Hindu marriage. Word is an essential ingredient of Caste-Hindu marriage. The two partners have to bind themselves by exchange of words, which is considered sacred. But here word by itself is not enough. The word has to be authenticated by a witness. The witness could be the holy fire, an idol, a tree or any other symbol, or a group of friends or relatives. But there has to be witness. The word for Caste-Hindu marriage is a necessary but not a sufficient condition. Thus, the Caste-Hindu are one step away from the tribal marriage.

The next stage is that of Muslim marriage. Besides the word and a witness, there has to be a document. The two partners must put their signatures as a token of having exchanged the word in the presence of a witness. Unless all the three elements—word, witness and deed—are there, the marriage is not complete.

The last stage in this evolution is that of civil marriage. A civil marriage comprises a number of stages. According to the law in India, firstly a notice of 30 days has to be given by the concerned parties about their intention of marriage. In case there are no objections, the two appear before the Marriage Officer on the appointed day, exchange the word in his presence and put their signatures in the Marriage Register as a token of having performed all the rituals. Then, the marriage officer declares them husband and wife and the marriage is complete.

Now let us see what happens if any item in this long ritual process of civil marriage is faulty. Suppose, the typist records a wrong date and the notice turns out to be of 29 days instead of 30 days. This marriage is null and void ab initio. No matter how sacred the word, how respectable the witness and how big the assembly, if one can prove that due notice was not given, one can go and tell his wife that she was not his wife as she had believed all those days, look at this notice, it is not legal. That is the end of the matter. I will leave it for your judgement as to how civil is this so called civil marriage compared to the primitive tribal marriage. It is the ignorance of the modern man that he refuses to see merit in other societies.

The example of marriage is illustrative of the basic conflict which arises due to differences in perception. The same holds in regard to property relationships in general and ownership of land in particular, money transactions including indebtedness, etc. There is a basic conflict between the tribal ethos and the general national milieu. Since word is sacred to the tribal, he believes that whatever he has said is pucca and he is bound to abide by it. But it has no meaning to the other party which knows that he is not bound by it. The modern system itself does not place the word above the formal forms. It is the formal form that is sanctified by law and supported by the stronger system. The formal form prevails to the utter confusion to the tribal who desperately holds on to his word.

Money represents a very high level of abstraction of formal relationships in the human society. As money enters a traditional tribal society, an element, which is entirely different qualitatively from all the familiar elements of the tribal system, gets introduced. The tribal does not know the value of money, he does not know how to handle it; he is unable to appreciate the new situation in which all relationships, in the final analysis, tend to be governed by the omnipotent money. Therefore, he is in an unenviable situation.

The sum total of the above analysis is that in the process of economic development where the modern formal system and the traditional tribal system are in juxtaposition, there is intimate interaction between the two which has far-reaching consequences for the tribal community. The tribal community traditionally has command over the resources in a given tract, according to well-accepted convention amongst different habitations

in the concerned areas and amongst the members of the community themselves. The juxtaposition of the new system is an alien element in that frame. Deep intrads are made by the new system gradually and the ultimate result is the loss of their command over resources. As we have seen, this process has been in operation incessantly for the last two centuries in many a tribal area. First the forest is lost, then the land and finally even his freedom has been jeopardised in many an area. The tribal has become a bonded labour in many cases. Thus, he has been reduced to the status of just the rubble. The tribal is forced to join that third non-descript stratum of our society. Look at the situation around Ranchi or Rourkela. What has happened to the traditional freedom loving tribal societies there? They have disintegrated to form that formless rubble. Where the tribals used to till their lands as proud agriculturists, are now flourishing industries. But, in this transformation not only the community has dissolved but many of its members have perished.

The basic issue in tribal development is how to ensure that the command over resources, which the tribal community enjoys in the beginning when these areas are opened up for the first time, is not disrupted. They should be able to negotiate the process of socio-economic transformation without loss of their command. This is the first premise of tribal development. A word of caution, however, is necessary at this stage. This loss of command assumes a number of forms which have to be carefully understood. For example, let us take the case of Nagaland. The Nagas have their own State which is managed by their own representatives. In a way, it may be taken as sufficient to ensure that their command over resources continues though, may be, in a modified form. This is one possible way of achieving the desired goal. There may be similar demands elsewhere. The command theory can provide the most important logic for creation of a separate state. But in my view this is neither necessary nor sufficient. It is not necessary that juxtaposition of two systems should always result in loss of command over resources. Similarly, the mere fact that a separate state or administrative unit is established does not by itself ensure that the command over resources of the community can be retained.

We may consider the above formulation in some detail. It is not unusual for the state to usurp the rights of a community or the common citizens. In the tribal areas the traditional commu-

nity is under pressure from the modern state. Moreover, there are a number of other elements in the process of socio-economic transformation which are equally important and sometimes crucial. The modern system in some cases operates subtly. Here we may also consider the significance of the oft-repeated cliche that tribal communities should join the main stream of national life. Does it mean that they should transform themselves into a mirror image of the 'main-stream' which itself suffers from tremendous stratification? Or, we should have a mixie of give and take. The tribal societies have much to offer provided we care to understand their strong points. I was asking some tribal students in my class the other day 'Tell me, why should you have the institution of a *Chapashi* in your area?' Social stratification on class lines is against tribal tradition. Moreover, it is also known that not many tribal officers like to have a tribal *Chapashi*. The reason is simple. The tribal *Chapashi* will light his cigarette and, in response to the call-bell, will enter the room of his *Sahib* and ask 'Hello Mr. X, what you want?' He will take his own time to do the job. Sometimes he may even refuse to do some jobs. If the two fall out in some point he may say 'alright I will talk to you when we visit our village'. That is the end of it.

Such a response is not in consonance with the new impersonal hierarchical roles which are implicitly accepted by two members of the same community by joining the new organisation. Therefore, even a tribal officer may prefer a low cast *Chapashi* since he belongs to a stratified society and accepts his role in the official hierarchy as well as naturally as in his own society. Now here I ask my students another question as to how long are they going to continue to have the low-caste *Chapashis* in their area. There are two processes which are operating incessantly. Firstly, today the tribal *Chapashi* and the tribal *Sahib* have the same emotional response because they belong to the same village; both of them share the common experience of their traditional community. But then the son of the tribal *Chapashi* and the son of the tribal *Sahib* will not have that privilege; they will grow in different surroundings as two different individuals. These two no doubt may have some memories which may provide some binding force between them. But in the third generation, even these memories will fade out. The son of a tribal *Chapashi* is likely to accept the role of a humble *Chapashi* more easily than his father.

who first came from the village with another tribal youth who, however, became a Sahib. In any case, his grand son is likely to have no qualms and would accept the role of a Chapeeshi as sincerely, as easily and as obediently as the low-caste man.

The basic question is whether it is necessary to introduce this dehumanising process in a society which has the traditional egalitarian ethos. In fact we are dedicated to building up of that ethos in the national life. But unfortunately the modernising tribal elite do not have a model with that ideal to emulate. The only model which they have is that of the larger national life comprising socially and economically structured society where there are poor and there are rich. It can not be a model for an egalitarian society. Unfortunately, we are not even moving in that direction. My point is that in the tribal areas there is still an opportunity; we have not exploited this potential; we have not even appreciated the significance of their living tradition for the national life. The village community in the tribal areas is strong; the tribal community is strongly in favour of retaining the traditional egalitarian structure, but they do not have a clear idea about what is happening. The elite amongst them which is capable of understanding the nature of new forces is partisan. Consequently, the community is helpless before the new system.

An array of new elements, which are not very healthy, are being injected into the socio-economic system of these areas. The most desirable goal would have been to retain the egalitarian ethos—to harness the new science and technology and the new organisational systems for strengthening the socialistic structure. But these goals are against the narrow organisational systems for strengthening the socialistic structure. But these goals are against the narrow interests of the emerging elite. Can we do something in this context? In view of the prevailing national milieu of individualism, acquisitiveness, and rotarice for quick success, it may be difficult for the tribal elite to act otherwise. But at least one thing is possible, that is, the development in the tribal areas may be so guided that deprivation processes do not set in. At least no tribal need be poor. There is no doubt that they are the lucky people. Poverty is still not there. But a distinction has to be made between an 'earlier stage of development with meagre wants and small production-base' and 'poverty'

which is an entirely different phenomenon so that there is no confusion of issues.

The basic question which can be formulated here is whether the tribal communities should embark on the path of economic development unmindful of the fact that poverty may appear amongst them in that process; some people may grow rich while others may face deprivation. And then all these poor may join together and raise the slogan 'Workers of the World Unite'; or they may raise a red flag, or a blue flag, or a flag of some other hue. Or, should we adopt a path where a situation of poverty, squalor and stark inequality do not arise? Let it be accepted as the goal of our planning that the last man in the tribal society will be not allowed to go below what may be termed as a reasonable level of living. Development should be organised as a process of building up. The most promising part of this promise is its consonance with the tribal ethos. If the tribal community is allowed to have their say and enabled to participate actively in the development plans, this will be their most preferred choice. Here is the real significance of the politico-social system of these traditional communities. Without exaggeration I can say that, given a choice, these societies would have seen to it that nobody amongst them becomes very rich and none of them was rendered very poor. They have a long tradition of maintaining the social balance. This aspect of their life has not been fully appreciated in our national life. The new elite amongst them has been mistaken as the genuine tribal leadership and taken to represent the community ethos. This is not so. Therefore, the process of development in many a tribal area has taken a wrong direction with rather unhappy results.

Thus, finally the entire question of tribal development boils down to two basic issues, viz., (i) whether the traditional command of the community over resources can be preserved, and (ii) whether the egalitarian structure of these communities can be retained and their social milieu can be taken advantage of to initiate a process so that socio-economic transformation can be negotiated without deprivation. If these goals are to be achieved, no prescriptions can be super-imposed from outside. In fact, we do not have a moral right to do so. This process can be stimulated by the community itself. The community should be allowed to enable to make their own decisions.

This last question brings me to the operation of some of the basic democratic processes in our country, we as a nation are wedded to democratic decentralisation. In my view 'Democratic decentralisation' is a very unhappy term. It refers to a process of decentralisation of power which initially is located at a central point. Thus, by implication, it is accepted that the inherent power is in Delhi which could be shared with other levels. This is negation of the inherent power being with the people. Where is the question of decentralisation of the power which rests with the people. In a real democracy, the delegation can be only from bottom to upwards. Let the people delegate some powers to the State, let them delegate some powers to the Centre, but the people, the communities at the grass-roots are the real source of power; the final verdict should be theirs. The elites in our country are not democratic enough to accept this formulation. They are not prepared to trust the people. They belong to the system which has usurped the power of the people. The modern State is the worst tyrant irrespective of its colour—red, blue or white. The State pays merely lip service to the sovereignty of the people in whose name swearing goes on day in and day out; the State does not honour that trust. That is the basic conflict in the contemporary human situation.

People's participation in the real sense of the term is rather difficult when source of their authority is delegation of power from above. I will illustrate this point by an example. One day a tribal approached me in Basar where I was Dy. Commissioner. He said, 'Sir, our tank has been taken away by the Gram Panchayat'. Since I saw nothing wrong in this simple statement, I said 'that is fine, what do you want from me?'. He said, 'Sir, give the tank back to our Gaon Panchayat'. I was not able to follow him, I was rather perplexed; what could be the significance of a change of word? But a little reflection made the things clear, I had a long chat with him. The basic point before the community was about the exercise of the real authority. Gram Panchayat is a formally constituted authority under law. In the village setting it is symbolised by its secretary. All decisions of the Gram Panchayat are subject to appeal in higher forums. In the tribal analysis whatever the State decides is the last word. Gram Panchayat notwithstanding its chase form, is a lowly last run in long hierarchy

beginning with the dizzy heights of Delhi. In contrast, Gaon Panchayat is the traditional body of the people symbolised by Gaon. The final authority vests with the people. In this case, the people are the legislators; they comprised the executives, they are the interpreters of their conventions, they are the last arbiters. This is how the tradition, as the tribal people know, has continued as living reality. It is this sovereignty which should vest with the people in relation to the management of their ordinary life. This was the situation in our country before the British came. Whoever was the ruler—Akbar or Ashok—it did not matter. The village affairs were within the exclusive purview of the people.

Today with all our democratic pretensions, we are not prepared to honour the sovereignty of the people in the real sense of the term. It is here that the tribal community is unable to reconcile. In their case, the tradition of self-governance has continued; it is a reality which they have experienced. But it is being destroyed bit by bit, by new institutional forms which the tribal is not able to comprehend. Consequently, the community finds itself completely at the mercy of the modern system notwithstanding the fact whether it is a benevolent modern system or authoritarian modern system. All of them begin with the premise about the source of authority being away from the people; they are in a way anti-people. If we can not honour the authority of the people, if we can not trust the people with matters concerning with their own self, the education of their children, their new nutrition, and so on, there is something basically wrong.

In the final analysis, the choice really is between credibility of a petty official symbolising the system and credibility of the people. Those of us who have never enjoyed community life and experienced its functioning can not appreciate the agony of the people whose authority is undermined by those mimics of the system for whom they can not have any regard either as individuals or as a part of the system. I can assure you that if the people are allowed to conduct their own affairs, there can not be any disaster, things will be much better compared to what they are today. What is more, this will engender a new confidence, a new faith in the people, a climate in the nation, which will provide the solid foundation for building an egalitarian society of the dreams of the founding fathers of our nation.

THE JUANGS OF ORISSA: THEIR WORK AND FOOD INTAKE, DEMOGRAPHY AND FERTILITY

Dr. N. Patnaik

Introduction

The Juang is one of the primitive tribes spread over the districts of Keonjhar and Dhenkanal of Orissa. The section of the tribe living in Keonjhar district carries on shifting cultivation and those living in Dhenkanal district are settled cultivators and wage earners.

Broadly three features stand out as special characteristics which distinguish them from other tribal communities. These features are:

(1) Slash and burn cultivation which goes by the name of Dahi (Firing), Kamana (Shaving) or Talo (up land) in the Keonjhar hills.

(2) Mandaghār (Bachelors' dormitory), the largest hut in the village where unmarried young men sleep at night and spend time in dancing with the unmarried girls in accompaniment of music and play of *chang*, a flat tambourine-like drum.

(3) Division of villages into Bandhu (cognatic) and Kukumba (Agnatic) villages.

Like the Santal, Munda, Bihār and the Ho, the Juangs belong to the Proto-Australoid racial stock and have a language of their own which forms a branch of Proto-Central Munda group of languages. Most of the Juang men have become bilingual and speak and understand Oriya in addition to their mother tongue. But the Juang women find it difficult to understand Oriya and speak exclusively their mother tongue.

The population figures of the Juang show a great variation from one decennial census to the

other. Their population as estimated by the census of India from the year 1891 to 1971 is stated below:

| Year of enumeration | Total population of the Juang |
|---------------------|-------------------------------|
| 1891 | 9,173 |
| 1901 | 11,159 |
| 1911 | 12,823 |
| 1921 | 10,454 |
| 1931 | 15,024 |
| 1941 | 17,032 |
| 1951 | 12,559 |
| 1961 | 21,880 |
| 1971 | 24,379 |

The above figures show a fall of the Juang population in 1921 and 1951. The decrease in population by 4,473 souls between 1941 and 1951 is more significant than the decrease of 2,389 souls between 1911 and 1921. In the last 20 years there has been considerable increase in the Juang population. In a study of the carrying capacity of land under shifting cultivation among the Juangs of Keonjhar district Dr. Saradindu Bose (1967) has pointed out the consequences of increase in population among the Juangs in the following way.

- (1) Instead of depending on their own land the Juangs have taken to wage labour to supplement their income.
- (2) Some Juang families have left their native place and gone out in search of hired agricultural and manual labour.

(3) The rate of consumption of food has gone down to a great extent.

(4) Many Jueng households have run into debt and some Jueng families have changed their land-use by taking up wet cultivation in valley-bottom lands wherever such lands are available.

The land in the Jueng pith (Jueng country) of Keonjhar district is in short supply and there is heavy pressure of population on the land. Kadlibadi, for example, a typical Jueng village in Keonjhar district can support 307 adult units with two square meals a day, but there are 89 mouths to feed. Other Jueng villages present more or less the same problem. On account of depletion of the soil resulting from the repeated cutting and burning of the vegetational cover in the hill-slopes there has been considerable decrease in yield of the crops grown in lands under shifting cultivation. The minor millets which are the staple food of the Juangs are in short supply and whatever quantity of rice is available from the Tala lands is inadequate for consumption. On the whole the quantity of different crops produced from the Swiddens leaves nothing by way of reserve. Even at its best the Juangs of Keonjhar are fed far below their total needs.

The condition of the Juangs of Dhankantai district is some what better than what is seen in Keonjhar district. These Juangs carry on cultivation of paddy in the plain lands and supplement their income from land by taking up wage earning and agricultural labour. Though both sections of the tribe, shifting cultivators of

Keonjhar district and settled cultivators of Dhankantai district are largely at the subsistence level and experience shortage of food, their life style, the types of food they eat and the quantity of intake of different types of food vary from one area to the other. It is assumed that food governs the reproductive capacity in a community. Taking this basis for investigation five villages in the Jueng pith of Keonjhar district and four Jueng villages in Dhankantai district were taken up for study. The survey included collection of genealogies of all the households of the selected villages to find out marriage types, birth rate, fertility, fecundity and barrenness of women. Three families on the Keonjhar side and three families on the Dhankantai side were closely watched for seven days and the nature of works done by men, women and children and time devoted to different types of works were recorded. In these six families a food census was undertaken and the types of food taken by different members of these households including the quantity of different food items taken were also studied by direct observation method. The findings of the study are presented in the following paragraphs.

CLAN ORGANISATION AND MARRIAGE TYPES

Clan Organization

The study was undertaken in five villages of Keonjhar district and four villages of Dhankantai district. The Table 1 gives the clan composition of the villages included in the study.

TABLE 1
Study village and clan composition

| District | Single Clan | | Multiple Clans | |
|-------------|---|--|------------------------------------|--|
| | Villages | Clans | Villages | Clans |
| (1) | (2) | (3) | (4) | (5) |
| 1. Keonjhar | 1. Gonesika .. 2. Gupteganga .. 3. Kadlibadi .. | Tamerabek .. Barumbek .. Samnebek .. | 4. Tala Radia .. 5. Hetisida .. | 1. Barumbek .. 2. Tamerabek .. 3. Samnebek .. 4. Kainsibek .. 1. Hetisida .. 2. Barumbek .. 3. Samnebek .. |

| District | Single Clan | | Multiple Clans | |
|-----------------|-------------|-------|-------------------|----------------|
| | Villages | Clans | Villages | Clans |
| (1) | (2) | (3) | (4) | (5) |
| 2. Dhenkanal .. | | | 1. Mahulpada .. | 1. Banombo |
| | | | 2. Kaliimba | 2. Kaliimba |
| | | | 3. Kelaba | 3. Kelaba |
| | | | 4. Rangadaba | 4. Rangadaba |
| | | | 2. Baliabandh .. | 1. Adhnab |
| | | | 2. Benambe | 2. Benambe |
| | | | 3. Bhapur | 3. Bhapur |
| | | | 4. Boitani | 4. Boitani |
| | | | 5. Hatisalav | 5. Hatisalav |
| | | | 6. Kalimba | 6. Kalimba |
| | | | 7. Khntri | 7. Khntri |
| | | | 8. Manimba | 8. Manimba |
| | | | 9. Sindri | 9. Sindri |
| | | | 3. Govindpur .. | 1. Banambe |
| | | | 2. Hatisalav | 2. Hatisalav |
| | | | 3. Kelimba | 3. Kelimba |
| | | | 4. Kutubamdeh | 4. Kutubamdeh |
| | | | 5. Mudiamba | 5. Mudiamba |
| | | | 6. Sarimba | 6. Sarimba |
| | | | 4. Kurumtanger .. | 1. Banambe |
| | | | 2. Barchab | 2. Barchab |
| | | | 3. Dumburimba | 3. Dumburimba |
| | | | 4. Hatisalav | 4. Hatisalav |
| | | | 5. Kalimba | 5. Kalimba |
| | | | 6. Kutubandhab | 6. Kutubandhab |
| | | | 7. Mudiamba | 7. Mudiamba |
| | | | 8. Sarimba | 8. Sarimba |

Originally the villages were of single clan. But in course of time due to inter village migration of people many villages have become multi-clan in composition. This is more so in Dhenkanal district than in Keonjhar district. The Table 1 shows that of the five villages in Keonjhar district three villages were of each one clan and two villages of multiple clan in composition.

But in the case of Dhenkanal district all the four villages are each composed of multiple clans. In Kurumtanger there are as many as nine clans. Such a multiplicity in clan composition is not found in the villages of Keonjhar district.

It is necessary to mention a few words about the terms used for the clans. In Keonjhar the

terms used for the clans are in most cases synonymous with the names of the villages. It means that a man or a woman refers his or her clan to his or her village. For the males 'bok' is suffixed and for the females 'rai' or 'dai' is suffixed after the clan names. For example Dudel, a man of Tal Raidia village belonging to Barumbak married to Mahusi a woman of Bersegd village belonging to Nachuidai clan. His son Ratana of Barumbak married to Rai of Dumburia village belonging to Dumburia rai clan and his daughter Shrimati of Barumrai clan married Jharia of Ganji village belonging to Ganjibak clan. Tal Raidia is a settlement which has been established by those who have migrated from Barum village and therefore the people of Tal Raidia identify themselves by the name of their former village, that is Barum which is also used for their clan name.

Other clan names which are compiled from the genealogies are listed below—

| Males | Females |
|----------------|---------------|
| Tumudibok | — |
| Kandibok | Kandirai |
| Dumuriabok | Dumurirai |
| Nachuibok | Nachuidai |
| Tengerpadiabok | Tengerpaderai |
| Barumbok | Barumdal |
| Samnabok | Samnarsi |
| Lambabok | — |
| Hatisidabok | Hatisidurai |
| | Temerurai |
| | Balingdai |
| | Balterenirai |

The clan names of the Juangs of Dhenkanal do not refer to the names of their villages. Nevertheless in most cases they are village names. For example one of the clan names is Khanati which is the name of a village existing in Dhenkanal. One Chakradhar Pradhan of Balodia Baudha belongs to Khanati clan whereas his wife Diboboni Pradhan of Gundichapada was born in Sarduba clan. From the clan names it is not possible to determine the sex of the person as is done in the case of the Keonjhar Juangs. In most cases the clan names ends with 'bok' irrespective of the sex of the

person and in all probability the 'ba' is the reduced form of 'bok' which is suffixed after the clan name by the Juangs of Keonjhar. A list of the clan names as compiled from the genealogies collected from the study villages in Dhenkanal district is given below:

| Males | Females |
|-----------|-------------|
| Barachebe | Barachabe |
| Kelabe | |
| Rangdabe | Rangdabe |
| Kelambe | Kelambo |
| Adhamab | Adhamab |
| Khanati | — |
| Barchana | Barchana |
| Hatisalav | Hatisalav |
| Mudingba | Mudingba |
| Barasabek | Ketubandrai |
| | Kalimberai |
| | Banoimba |

The list shows that the suffix 'bar' is common to both male and female clan names whereas the suffix 'rai' is exclusive to the females as in the case of Keonjhar Juangs. That the suffix 'bar' is the simplified form of 'bok' is evident from the fact that there is a clan called Barasabek the last name on the male side in the list.

Marriage Area and Types

As mentioned above the Juang villages were formerly of single clan and as the clan is exogamous no marriage within the village was possible. Therefore the villages were grouped into two divisions—one group forming the Kutumb villages and the other group forming the Bandhu villages. By this arrangement people of the former group of villages avoid marriage among themselves because they are related to one another by blood. They can marry only in those villages which are of Bandhu category, that is, villages composed of clans other than their own with which marital relationship can be established. Now in those villages where the clan composition has been multiple, cases of marriage within the village are met with in significant number. The Table 2 gives the marriage area of the study villages.

TABLE 2
Marriage Area of Study Villages

| Study area (1) | Villages with clan composition | | No. of marriages | |
|-------------------|--|----------------------------------|--------------------------|---------------------------|
| | Single clan villages (2) | Multiple clan villages (3) | Within village (4) | Outside village (5) |
| 1. Keonjhar | 1. Gonesika 2. Guptaganga 3. Kadilibadi | | | 28 16 36 |
| | | | | 79 |
| | 4. Tala Reidia 5. Hajnanda | | 5 .. | 61 45 |
| | | | | 106 |
| | Total | .. | 5 | 185 |
| 1. Dhenkanal | 1. Beldibandha 2. Kurumtager 3. Mahupada 4. Govindpur | | 3 3 | 30 40 8 28 |
| | Total | .. | 6 | 107 |

The table shows that of the five villages in Keonjhar district three villages are of single clan and two of multi-clan in composition. All the 79 cases of marriage enumerated from the genealogies which are drawn from all the households of the three single clan villages were held outside these villages. As regards the two multi-clan villages in one case five marriages were held within the village and 61 marriages outside the village and in the other case all the 45 marriages were held outside the villages and there was not a single case of marriage within the village even though it is composed of inter-marrying clans.

In the case of Dhenkanal all the four villages are multi-clan in composition. In two cases out of 76 marriages as many as 70 marriages were held outside these villages and only six marriages within these villages. In the other two cases all

the 37 marriages were held outside these villages.

One significant trend which emerges from these cases of marriage in multi-clan villages is that the choice for marriage in majority cases in both areas is towards outside villages.

As regards the marriage types arranged marriage in which parents play a dominant role in the selection of bridegroom or bride is considered a matter of great prestige in Dhenkanal district. But in contrast, cases of love marriage in which boys and girls enjoy considerable liberty in selecting their partners are most common among the Juangs of Keonjhar district. Preferential types of marriage which are found more in number among the Juangs of Dhenkanal are of levirate and sororate categories whereas marriage by exchange and sister exchange types are more popular among their counterparts in Keonjhar district.

DAILY PATTERN AND SEASONAL RHYTHM OF WORK

Pattern of Work

Except slight differences, by and large, the works carried out by the Juangs in both the districts from morning to night in different time intervals are of similar nature. In both the places women get up from bed when the cock crows and in fact they rise earlier than men in both the areas. Household chores of work such as cleaning houses, fetching water, husking millets or paddy and cooking meals are commonly exclusive to women in both the areas. The daily routine of work as observed in Keonjhar and Dhenkanal districts is furnished in Annexures 1 (a) and 1 (b).

In this respect there is some difference in the works of men. As the Juangs of Keonjhar depend for their livelihood chiefly on shifting cultivation which has nothing to do with plough and animal traction they do not have any draught animals and therefore taking care of such animals is not a part of their work. But in the case of the Juangs of Dhenkanal who maintain plough bullocks, such works as cleaning cowshed, cutting grass for the cattle, and feeding and, tending them are most essential and the major portion of the morning hours is devoted to these works.

Another difference is noticed in the aesthetic aspect of daily life. The Juangs of Keonjhar maintain in every village a bachelors' dormitory and keep it in good repair. Almost every evening after the day's work is over the unmarried boys and girls gather in the open space in front of the Mandagarh and dance together. Such dancing by boys and girls together among the Juangs of Dhenkanal district is discouraged under the influence of the caste Hindus who look askance at such dancing.

Annual cycle of activities

In the case of the Juangs of the Keonjhar district the economy is based in shifting cultivation and collection of forest produce whereas in the case of their counterparts in Dhenkanal district the livelihood hinges chiefly on wage earning, agricultural labour and paddy cultivation in the plains. This difference in occupational pursuits has made all the differences in food habits and economic activities between the Juangs of both districts. Both men and women among the Juangs of Keonjhar are

engaged fully in some months and partially in other months in various agricultural operations connected with shifting cultivation. Their staple food is millet which is grown in swiddens. In every Juang village there are many jackfruit and mango trees and the Juangs live chiefly on jackfruits and mangoes in seasons and on mango kernel for sometime also. Edible roots and tubers, fruits and flowers collected from the forests supplement the millet diet in almost all seasons. Hare and deer caught or hunted in the nearby forests enrich the Juang diet, but the supply of animal protein from this source is most irregular.

Among the Juangs of Dhenkanal cultivation of rice in the plain lands and agricultural labour and wage earning are significant economic pursuits and the rice which is grown in the lands and received as wage forms their staple diet. As there is no forest nearby no forest produce is available and hunting is out of question. The fruit trees like mango and jackfruit are available but not in such a great number as is present in the Juang pith of Keonjhar district. The Juangs of Dhenkanal district who are primarily farming people get a variety of green vegetables either from their own lands or from neighbouring farming communities and from markets and eat a fair quantity of them with cooked rice and pulses. Among them women do as much hard work as men do and the bulk of the hired labour is drawn from the female section of the community. The Annexure 2(a) gives the annual cycle of activities as prevalent among the Juangs of Keonjhar and Annexure 2(b) that of their counterparts of Dhenkanal.

FOOD COMPOSITION AND NUTRITION

Juang Food

The Juangs of Keonjhar depend primarily upon millet diet with addition of rice, vegetables, maize and wheat according to seasonal variations. The important types of food are millet, or ragi gruel, parboiled rice cooked in water, rice cakes, rice water, roasted maize and maize gruel, bread prepared from wheat flour, pulses cooked into dal, vegetable curry, green jackfruit cooked to make curry, green leaves added to ragi or millet gruel, mango kernel made into gruel or cakes, boiled or roasted roots and tubers, mutton, chicken, egg, meat cooked with spices. Fruits such as jackfruit and mango form principal diet of the Juangs in summer season. The Juangs

are also habituated to drinking liquor brewed from mohua flowers and prepared from rice and maize.

The comparison the foods taken by the Juangs of Keonjhar, Dhenkanal districts shows some difference. Among the Juangs of Dhenkanal rice forms the staple diet and millets, ragi and maize are occasionally taken. Their main food is what is called Pakhal Bhat, cooked rice kept immersed under plain water over night. Whenever fresh and hot cooked rice is eaten, the dal prepared from pulses and curry prepared from various types of vegetables from the side dishes. Green mango and tamarind cooked together are taken for sour taste. Cakes are prepared from rice powder and ragi flour on special occasions and eaten without any side dishes. Mutton, chicken and eggs are also used as food whenever such food items are available particularly during festivities. Vegetables and meat are cooked in water and oil, turmeric, onion, chilly and spices are added to make the dishes tasty.

The Juangs of Dhenkanal are not so much habituated to drinking liquor as are those of Keonjhar area. But they drink the juice of powdered opium fruits boiled in water which is intoxicating and relief giving.

During the field work the daily food intake by different family members in six families—three in Keonjhar study area and three in Dhenkanal study area was observed for seven days and the quantity of different food items eaten per day by male and female adult units was estimated with the help of the standard literature on nutrition brought out by National Institute of Nutrition, Hyderabad. The constituent nutrients of different foods were found out and the extent of 13 constituents available in the daily average diet per male adult unit and female adult unit were calculated and the findings compared with the norms recommended by the Indian council of Medical Research to find out excess or deficiency intake of each of these constituents. The Table 3 gives a comparative picture of excess and deficiency of these 13 nutrients in the diet of the Juangs of both areas. The data are arranged under three categories :

1. Nutrients found in excess in the diet taken by both men and women.
2. Nutrients found deficient in the diet taken by both men and women.

3. Nutrients found in excess in the diet taken by the males and deficient in the diet taken by the females.

The table shows that nutrients like calcium, phosphorus, iron and Vitamin A are found in excess in the diet taken by the Juangs of both sexes of Keonjhar district. But excepting Phosphorus which is common to both areas certain other nutrients such as Carbohydrate, Vitamin B₁ and Niacin are found in excess in the diet of the Juangs of both sexes in the Dhenkanal area.

TABLE 3
Excess and Deficiency of selected Nutrients
in Juang diet

| Keonjhar | Dhenkanal |
|--|------------------------|
| Excess intake by both men and women : | |
| Calcium | Phosphorus |
| Phosphorus | Carbohydrate |
| Iron | Vitamin B ₁ |
| Vitamin A | Niacin |
| Deficient intake by both men and women : | |
| Protein | Fat |
| Fat | Vitamin C |
| Calory | Common salt |
| Vitamin C | Vitamin A |
| Common salt | |
| Excess intake by males and deficient intake by females : | |
| Carbohydrate | Vitamin B ₁ |
| Vitamin B ₁ | Protein |
| Niacin | Calory |
| Vitamin B ₁ | Calcium |
| | Iron |

As regards deficiency it is found that Fat, Vitamin C and common salt are deficient nutrients common to both areas. The deficient nutrients which are specific to the areas are protein in the Keonjhar area and Vitamin A in the Dhenkanal area.

There are seven different nutrients which show excess intake by the males and deficient intake by the females. Of these food values Vitamin B₁ is common to both areas. Niacin and Vitamin B₁ fall to the Keonjhar side and Protein, Calory, Calcium and Iron to the Dhenkanal side. Food values of different items of food taken daily per

male adult unit and female adult unit both for Keonjhar villages and Dhenkanal villages is given in the Annexure 3 (a) and 3 (b). The composition of the average diet of the Juangs of the study areas as compared with the norms recommended by Indian Council of Medical Research is presented in Annexure 4 (a) for Keonjhar Study Area and in Annexure 4 (b) for Dhenkanal Study Area.

Juang population and Sex Ratio

In the study area the population of the Juangs was 470 (236 males and 234 females) in Dhenkanal and 480 (229 males and 221 females) in Keonjhar. The sex ratio comes to 992 in the

former area and 965 in the latter area. The Table No. 4 gives the population and sex ratio among the Juangs at the state as well as district levels for 1961 Census and 1971 Census as compared with the corresponding figures of the study areas as collected during the survey in 1984. The sex ratio for both the study areas is 979 whereas the corresponding figure for the Juangs of Dhenkanal district as a whole is 1,041 and for Keonjhar is 1,074. Except the study areas and Keonjhar district for 1961 Census the sex ratio at the State level and at the district level in both 1961 and 1971 censuses is above 1,000 varying from 1,013 to 1,074. This shows that the female population is greater than the male population in the Juang society.

TABLE 4
Juang population and Sex-Ratio

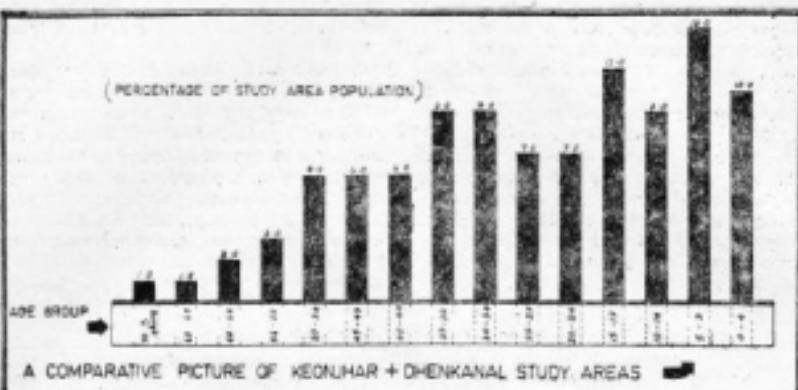
| Year (1) | Area (2) | No. of couples (3) | Population | | | Sex Ratio Females per 1,000 Males (7) |
|-------------|---|--------------------------|--------------|--------------|----------------|---|
| | | | Total (4) | Males (5) | Females (6) | |
| 1961 | Orissa | .. | 21,890 | 10,877 | 11,013 | 1,013 |
| 1961 | Keonjhar District | .. | 9,768 | 5,028 | 4,740 | 943 |
| 1961 | Dhenkanal District | .. | 11,661 | 5,887 | 5,964 | 1,067 |
| 1971 | ORISSA | .. | 24,384 | 11,888 | 12,496 | 1,061 |
| 1971 | Keonjhar District | .. | 12,372 | 6,966 | 6,406 | 1,074 |
| 1971 | Dhenkanal District | .. | 11,378 | 5,874 | 5,804 | 1,041 |
| 1984 | Dhenkanal Study Area | .. | 470 | 236 | 234 | 992 |
| 1984 | Keonjhar Study Area | .. | 480 | 229 | 221 | 965 |
| 1984 | Study Area of Keonjhar and Dhenkanal | 202 | 920 | 465 | 455 | 979 |

Distribution of Juang population of the study areas by age-groups.

The population of the Juangs in both the study areas is distributed under 14 age-groups each of four year interval and the last age-group is 70 years and above. Based on the data a

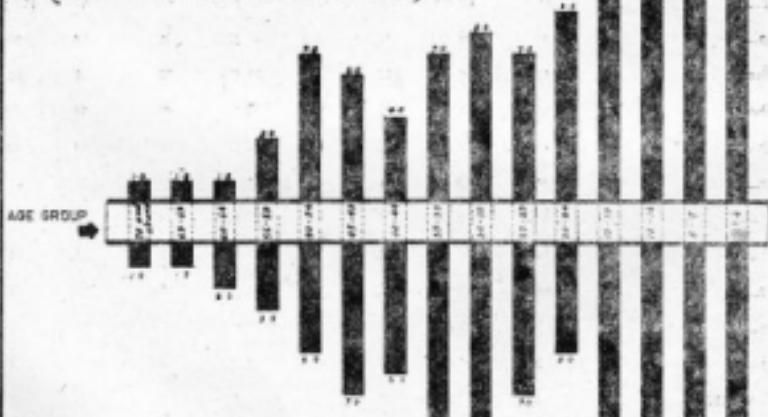
population pyramid has been constructed. The distribution of the population under different age-groups is given in Table 5. But the population pyramid is given below. By its side the population pyramid for Keonjhar and Dhenkanal districts is given for comparison.

Population Pyramid—Dhenkanal & Keonjhar



KEONJHAR STUDY AREA

(PERCENTAGE OF STUDY AREA POPULATION)



DHENKANAL STUDY AREA

(PERCENTAGE OF STUDY AREA POPULATION)

The pyramid shows that there is no basic difference between the study areas in respect of the distribution of population under different age-groups. The population in the four age-groups from the bottom is more or less the same in both the areas and those age-groups comprise larger population than the higher age-groups which show significant decline in population from the age-group 40-44 years upwards to 70 years and above. On the whole the population pyramid conforms to a broad base up to the age-group 15-19 years after which it takes a tapering trend to the top with a slight bulging in the age-group 50-54 years in the Keonjhar side. Compared with the population pyramid for the

overall population of Keonjhar and Dhenkanal districts taken together it shows that in the pyramid the tapering trend is very clear and the base is much broader than that of the study areas.

The distribution shows that the children of 0-4 years and 5-9 years age-groups comprise 10.42 per cent and 12.76 per cent respectively in the entire population of the Dhenkanal study area. The corresponding figures for the Keonjhar study area in the same order are 10.88 per cent and 12.89 per cent. It shows that nearly one-fourth of the population in the study areas fall to the first two lowest age-groups up to 9 years.

TABLE 5
Age-Groupwise Distribution of Jharsup population, 1964

| Sl. No. | Age-group | Dhenkanal Study area | | | Keonjhar Study area | | | Dhenkanal and Keonjhar Study area | | | |
|------------|--------------|----------------------|-----|-----|---------------------|-----|-----|--------------------------------------|------|------|----------|
| | | M | F | T | M | F | T | M | F | T | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | |
| 1 | 0-4 | ... | 28 | 20 | 48 (10.0) | 28 | 20 | 48 (11.0) | 58 | 46 | 98 (10) |
| 2 | 5-9 | ... | 34 | 26 | 60 (12.0) | 36 | 22 | 58 (13) | 70 | 48 | 118 (13) |
| 3 | 10-14 | ... | 26 | 17 | 42 (9) | 27 | 16 | 43 (10) | 52 | 33 | 88 (9) |
| 4 | 15-19 | ... | 22 | 31 | 53 (11) | 28 | 38 | 54 (12) | 48 | 59 | 107 (11) |
| 5 | 20-24 | ... | 14 | 11 | 25 (8) | 18 | 23 | 41 (8) | 32 | 34 | 66 (7) |
| 6 | 25-29 | ... | 14 | 17 | 31 (7) | 12 | 19 | 31 (7) | 26 | 38 | 62 (7) |
| 7 | 30-34 | ... | 16 | 31 | 47 (9) | 18 | 18 | 38 (8) | 34 | 48 | 83 (8) |
| 8 | 35-39 | ... | 21 | 27 | 48 (10) | 18 | 17 | 32 (7) | 36 | 44 | 80 (8) |
| 9 | 40-44 | ... | 18 | 10 | 28 (8) | 19 | 11 | 20 (6) | 27 | 21 | 48 (6) |
| 10 | 45-49 | ... | 23 | 10 | 33 (7) | 11 | 16 | 27 (8) | 34 | 26 | 60 (8) |
| 11 | 50-54 | ... | 8 | 16 | 23 (6) | 20 | 11 | 31 (7) | 28 | 28 | 54 (6) |
| 12 | 55-59 | ... | 8 | 6 | 13 (3) | 4 | 12 | 14 (3) | 10 | 17 | 27 (3) |
| 13 | 60-64 | ... | 2 | 7 | 9 (2) | 3 | 4 | 7 (1) | 5 | 11 | 16 (2) |
| 14 | 65-69 | ... | 1 | 3 | 4 (1) | 2 | 2 | 4 (1) | 3 | 5 | 8 (1) |
| 15 | 70 and above | ... | 1 | 6 | 5 (1) | 1 | 2 | 3 (1) | 2 | 6 | 8 (1) |
| Total | | 296 | 234 | 430 | 229 | 221 | 450 | 465 | 455 | 828 | |

Marital status of females of different age-groups (in percentage).

The marital status includes three components—unmarried, married and currently married. The married includes married, widowed and divorced, and the currently married includes those who married last year. The information are provided in the Table. 6

The data show that there is no woman above 20 years of age among the Juangs of Keonjhar who are unmarried. All the unmarried girls are confined to the first two age-groups, that is, 13 girls to the age-group 10-14 years and 16 girls to the age group 15-19 years and in the remaining age-groups there is not a single case of woman of unmarried status.

In contrast a different picture is seen in the case of the Dhenkanal study area. In this case there are unmarried women not only in the first two age-groups as in the case of Keonjhar but

also there are unmarried women in many older age-groups such as one unmarried woman in 25-29 year age-group, two each in 30-34 year, 35-39 year age-groups, three each in 50-54 year and 60-64 year age-groups. As regards currently married women all cases of this nature are confined to the first two age-groups that is 10-14 years and 15-19 years. In the case of the Keonjhar study area all the three married women of 10-14 year age-group were currently married. But in the next age-group, that is, 14-19 years out of 19 married women of the Dhenkanal study area 11 women were currently married and out of 13 married women of the Keonjhar study area 7 women were currently married. Except these two age-groups no other age-group show any currently married cases. It means that both in Dhenkanal and Keonjhar marriages of women are held before they attain 20 years of age and late marriage after 20 years is not in vogue among the Juangs.

TABLE 6

Marital status of females in different age groups for percentage

| Age-groups | Marital status of Jongs of the study area, 1994 | | | | | | Currently married | | |
|------------|---|-----------|-----------|----------------------------------|------------|------------|-------------------|-----------|-----------|
| | Unmarried | | | Married, Married+Window+Divorced | | | DKL | KEO | DKL+KEO |
| | DKL | KEO | DKL+KEO | DKL | KEO | DKL+KEO | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| 10-14 | 17 | 16(81-25) | 30(90-91) | — | 34(18-75) | 3(8-00) | — | 3(100-00) | |
| 15-19 | 12(38-71) | 15(53-57) | 27(45-76) | 19(51-29) | 13(46-43) | 32(64-24) | 19(57-89) | 7(53-85) | 18(56-30) |
| 20-24 | .. | (0%) | 0 | 11(100%) | 23(100-00) | 34(100-00) | — | | |
| 25-29 | 11(5-88) | 0 | 1(2-70) | 16(94-12) | 19(100-00) | 36(97-22) | — | | |
| 30-34 | 2(6-45) | 0 | 2(4-00) | 28(93-55) | 18(100-00) | 47(95-92) | — | | |
| 35-39 | 2(6-45) | 0 | 2(4-54) | 25(93-56) | 17(100-00) | 42(95-46) | — | | |
| 40-44 | —(0%) | 0 | — | 10(100%) | 11(100-00) | 21(100-00) | — | | |
| 45-49 | —(0%) | 0 | — | 10(100%) | 16(100-00) | 26(100-00) | — | | |
| 50-54 | 3(20%) | 0 | 3(11-54) | 12(80%) | 11(100-00) | 23(88-45) | — | | |
| 55-59 | —(0%) | 0 | — | 5(100%) | 12(100-00) | 17(100-00) | — | | |
| 60-64 | 3(42-86) | 0 | 3(27-27) | 4(87-14) | 4(100-00) | 8(72-73) | — | | |
| 65-69 | —(0%) | 0 | — | 3(100%) | 2(100-00) | 5(100-00) | — | | |
| 70+ | —(0%) | 0 | — | 4(100%) | 2(100-00) | 6(100-00) | — | | |
| 15-44 | 17(18-38) | 16(12-55) | 32(13-17) | 110(86-62) | 101(87-07) | 211(86-83) | 11(9-91) | 7(6-93) | 18(8-50) |
| 15-49 | 17(12-41) | 16(11-36) | 32(11-90) | 120(87-59) | 117(88-64) | 237(88-19) | 11(9-09) | 7(5-98) | 18(7-61) |

DKL = DinenKansil
KEO = KrongKsar

Percentage of married, widowed and divorced population.

Data regarding these matters are presented in Table 7. No special feature is noticed in the category of married in both the study areas except that in the case of Keonjhar area the percentage of married among the females is low from the age-group of 50-54 years upwards. In the case of Dhenkanal area such a low percentage of married among the females is marked only in the age-group of 50-54 years.

The widowhood is seen from the age-group of 30-34 years upwards for both males and females in the Dhenkanal study area and the percentage of widowhood is spectacularly larger from the age-group of 45-49 years upwards in the case of the females. But it is not so in any age-group except that of 60-64 years in the case of the males. The Keonjhar study area present a different picture. In this area the widowhood starts from early age-group of 15-19 years. The males do not show widowhood in large extent from younger age-groups

to older age-groups. But in the case of the females the widowhood is seen in small extent up to the age-group of 45-47 years after which the widowhood is seen to have existed in great magnitude.

The problem of divorce is of little importance among the Juangs of Dhenkanal study area whereas it is of great significance in the Keonjhar study area. The matter of divorce has occurred only in the age-group of 35-39 years to the extent of 5.6 per cent on the male side in the former study area. But this problem is seen to have occurred from very early age-group of 20-24 years on both sides of males and females up to the age-group of 45-49 years beyond which there is no case of divorce in the latter study area. One of the reasons for the occurrence of divorce to a greater extent among the Juangs of Keonjhar than among their Dhenkanal counterparts is that the former have retained tribal characteristics to a great extent and are less influenced by the Hindus among whom the custom of divorce is not in vogue as it is among the tribal communities.

TABLE NO. 7

Percentage of married, widowed and divorced population in different age-groups (1959)

| Age-group (1) | Dhankot study area | | | | | | Korjhar study area | | | | | |
|------------------|--------------------|----------------|--------------|----------------|--------------|----------------|--------------------|----------------|---------------|-----------------|---------------|-----------------|
| | Married | | Widowed | | Divorced | | Married | | Widowed | | Divorced | |
| | Males (2) | Females (3) | Males (4) | Females (5) | Males (6) | Females (7) | Males (8) | Females (9) | Males (10) | Females (11) | Males (12) | Females (13) |
| 10-14 | .. | .. | .. | .. | .. | .. | 18.75 | .. | .. | .. | .. | .. |
| 15-19 | 13.64 | 61.29 | .. | .. | .. | .. | 30.77 | 42.86 | .. | 35.7 | .. | .. |
| 20-24 | 64.28 | 100% | .. | .. | .. | .. | 72.22 | 82.61 | 55.55 | 8.7 | 65.5 | 86.9 |
| 25-29 | 85.71 | 94.12 | .. | .. | .. | .. | 83.33 | 84.21 | 8.33 | 10.53 | 8.33 | 5.26 |
| 30-34 | 100 | 93.55 | 6.25 | 13.79 | .. | .. | 100.00 | 83.33 | .. | 11.11 | .. | 6.95 |
| 35-39 | 85.71 | 92.59 | 16.67 | 20% | 6.66 | .. | 86.66 | 76.47 | 6.67 | 23.63 | 6.67 | .. |
| 40-44 | 88.88 | 100% | .. | 20% | .. | .. | 88.89 | 81.82 | 11.11 | 18.18 | .. | .. |
| 45-49 | 100 | 100% | 4.25 | 60% | .. | .. | 100.00 | 81.25 | .. | 6.25 | .. | 12.5 |
| 50-54 | 75 | 80% | 16.67 | 58.33 | .. | .. | 75.00 | 27.27 | 25.00 | 72.73 | .. | .. |
| 55-59 | 75 | 100% | 16.67 | 100 | .. | .. | 100.00 | 33.33 | .. | 66.67 | .. | .. |
| 60-64 | 100 | 67.14 | 50% | 76% | .. | .. | 100.00 | 50.00 | .. | 50.00 | .. | .. |
| 65-69 | 100 | 100% | .. | 100% | .. | .. | 100.00 | 50.00 | .. | 50.00 | .. | .. |
| 70+ | 100 | 100% | .. | 75% | .. | .. | 100.00 | .. | .. | 100.00 | .. | .. |
| 15-44 | 73.33 | 87.40 | 6.19 | 9.91 | 1.29 | .. | 71.43 | 72.41 | 4.08 | 11.25 | 3.06 | 3.45 |
| 15-49 | 76.13 | 88.32 | 5.0 | 14.05 | 1% | .. | 74.31 | 73.45 | 3.67 | 10.61 | 2.75 | 4.54 |

Percentage of ever married women with number of children.

In this section the matter relating to the number of children which the married women have ever given birth in both the study areas is analysed. Children up to 14 years of age have been counted for this purpose. The data are furnished in the Table-8.

The table shows that the women having no child are in greater proportion in Keonjhar study area (13.24 per cent) than in Dhenkanal study area (9.09 per cent). The percentage of women having one child is the highest in both the areas. It is 23.14 per cent in the case of Dhenkanal and 22.52 per cent in the case of Keonjhar study area. As the number of children

increases the percentage of women bearing them steadily decreases. This pattern is largely applicable to the Dhenkanal study area. But no such clear cut pattern is noticed for the Keonjhar study area. In this case the percentage of women bearing two children is same as that of those bearing three children. After the third child there has been steep fall to 3.97 per cent for women bearing four children instead of further decrease the percentage of women bearing five children has been almost doubled, that is 6.62 per cent. There are no women in the Dhenkanal study area bearing more than five children. But in the Keonjhar study area such women were present, 1.99 per cent of women have given birth to six children and 1.32 per cent to more than six children.

TABLE 8
Percentage of ever married female with no. of children (0-14) Years of age

| Study Area | Number of Children | | | | | | | |
|--------------|--------------------|-------|-------|-------|------|------|------|---------------|
| | No child | One | Two | Three | Four | Five | Six | More than six |
| Dhenkanal .. | (9.09) | 23.14 | 17.36 | 12.39 | 2.48 | 1.65 | .. | .. |
| Keonjhar .. | 13.24 | 22.52 | 16.56 | 16.56 | 3.97 | 6.62 | 1.99 | 1.32 |

Women having offspring above 14 years of age are not included in counting.

Births in the last one year by order of birth in percentage (Study area—1984) :

Information on births during the last one year by order of birth were collected from the study area. If a woman had reported having given birth to a child during the last one year and if the total number of children ever born to her was say 4 then the last year's birth in order of birth is 4. Such a classification of birth by parity is extremely useful for a number of reasons. The data relating to this problem are presented in table 9.

The table shows that 3 births have taken place in the youngest age-group of 15—19 years. The same number of births has also

taken place in the next higher age-group of 20—24 years. The data show that even the second birth has taken place in the much older age-group of 35—39 years in the Dhenkanal study area. But there is no such instance of second birth by the older women in the Keonjhar study area. The fourth, fifth and sixth births have all taken place within the range starting from 25 years to 44 years. Even the 8th and 9th births have occurred in the age-group of 30—34 years and such larger number of births by the women of middle age-group. Even the birth of 10th in order by women of 35—39 years have occurred in Dhenkanal districts. But the women of Keonjhar have no experience of giving birth to such a large number of children.

TABLE 9
Births in the last one year by order of birth in percentage (1984 study area)

| Sl. No. | Age-group of Mother | 1st | | 2nd | | 3rd | |
|------------|------------------------|------|-------|-------|-------|------|-------|
| | | DKL. | KEO. | DKL. | KEO. | DKL. | KEO. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 1 | 10-14 | .. | .. | .. | .. | .. | .. |
| 2 | 15-19 | .. | 12.90 | 33.33 | 8.23 | 8.33 | 6.45 |
| 3 | 20-24 | .. | 27.27 | 10.63 | 27.27 | 5.26 | 18.18 |
| 4 | 25-29 | .. | .. | .. | .. | .. | .. |
| 5 | 30-34 | .. | .. | .. | 8.45 | .. | .. |
| 6 | 35-39 | .. | .. | .. | 3.70 | .. | .. |
| 7 | 40-44 | .. | .. | .. | .. | .. | .. |
| 8 | 45-49 | .. | .. | .. | .. | .. | .. |
| 9 | 50+ | .. | .. | .. | .. | .. | .. |
| 10 | 15-49 | .. | 8.11 | 6.18 | 5.11 | 2.06 | 2.92 |

| Sl. No. | Age-group of Mother | 4th | | 5th | | 6th | |
|------------|------------------------|------|-------|------|-------|-------|------|
| | | DKL. | KEO. | DKL. | KEO. | DKL. | KEO. |
| (1) | (2) | (9) | (10) | (11) | (12) | (13) | (14) |
| 1 | 10-14 | .. | .. | .. | .. | .. | .. |
| 2 | 15-19 | .. | .. | .. | .. | .. | .. |
| 3 | 20-24 | .. | .. | .. | .. | .. | .. |
| 4 | 25-29 | .. | 17.65 | .. | 11.76 | 6.25 | .. |
| 5 | 30-34 | .. | 9.68 | 6.67 | 3.23 | 13.33 | 3.23 |
| 6 | 35-39 | .. | .. | .. | 3.70 | 7.69 | .. |
| 7 | 40-44 | .. | .. | .. | .. | 10 | .. |
| 8 | 45-49 | .. | .. | .. | .. | .. | .. |
| 9 | 50+ | .. | .. | .. | 2.94 | .. | .. |
| 10 | 15-49 | .. | 4.38 | 1.03 | 3.65 | 4.12 | 1.46 |

| SL No. | Age-group of Mother | 7th | | 8th | | 9th | | 10th | | Remarks |
|-----------|------------------------|------|-------|------|------|------|------|------|------|---------|
| | | DKL | KEO | DKL | KEO | DKL | KEO | DKL | KEO | |
| (1) | (2) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) |
| 1 | 10-14 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 2 | 15-19 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 3 | 20-24 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 4 | 25-29 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 5 | 30-34 | .. | .. | 3.23 | .. | 3.23 | .. | .. | .. | .. |
| 6 | 35-39 | .. | .. | .. | .. | .. | .. | 3.70 | .. | .. |
| 7 | 40-44 | 10 | 11.11 | .. | .. | .. | .. | .. | .. | .. |
| 8 | 45-49 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 9 | 50+ | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 10 | 15-49 | 0.73 | 1.03 | 0.73 | .. | 0.73 | .. | 0.73 | .. | .. |

Sex ratio of children (1-14 years) ever born

The number of male children and female children born to women of different age-groups varies between the two study areas. The Table 10 gives the information regarding this matter. It is seen that on the whole the proportion of female children to male children in the age-group of 1-14 years is greater in the Keonjhar study area than in the Dhenkanal study area. The sex ratio in the former area is 741.67 whereas it is 652.69 in the latter area. In five out of eight age-groups the sex ratio is greater in Keonjhar than in Dhenkanal and in one age-group the sex ratio has crossed 1000 in Dhenkanal where as it has gone up to 1400 in the age-group of 20-24 in Keonjhar.

Sex ratio of surviving children (1-14 Years).

It is interesting to compare Table 9 with Table 10 which gives information about the sex ratio of surviving children (1-14 Years). It is found

that 62.6 per cent of male children and 60.4 per cent of female children of 1-14 years born to women in their whole reproductive age range from 15 to 49 years survived in the Dhenkanal area. The corresponding figures for the Keonjhar area is 75 per cent and 69.6 per cent respectively. The mortality of female children has touched 50 per cent mark in three age-groups of their mothers that is 20-24 years, 30-34 years, and 40-44 years, in Dhenkanal where as it has crossed only in one age-group that is 35-39 years of their mothers in Keonjhar. Nothing can be inferred from this difference except that one can doubt the influence on the Dhenkanal Juangs of the Hindu society in which female children are not taken care of properly as the male children are. It may be mentioned that in a tribal society no difference in attitude towards the male and female children is marked. A male child is as much welcome as a female child is and therefore the latter is in no way discriminated against as her counterparts in a Hindu society suffers.

TABLE 10
Sex ratio of children (1-14) ever born

| Sl. No. | Present age of mother | Study Area | | | | | | | | |
|------------|-----------------------------|------------|---------|--------------|----------|---------|--------------|----------------------|---------|--------------|
| | | Dhankanal | | | Keonjhar | | | Dhankanal + Keonjhar | | |
| (1) | (2) | Males | Females | Sex ratio | Males | Females | Sex ratio | Males | Females | Sex ratio |
| 1 | 15-19 | 8 | 1 | 125 | 8 | 7 | 875 | 16 | 8 | 500 |
| 2 | 20-24 | 9 | 6 | 666.67 | 10 | 14 | 1400 | 19 | 20 | 1057.63 |
| 3 | 25-29 | 26 | 24 | 923.08 | 29 | 12 | 413.79 | 55 | 36 | 654.54 |
| 4 | 30-34 | 43 | 34 | 290.71 | 24 | 16 | 625 | 67 | 49 | 731.34 |
| 5 | 35-39 | 37 | 18 | 488.49 | 24 | 22 | 916.67 | 61 | 40 | 655.74 |
| 6 | 40-44 | 27 | 22 | 814.81 | 11 | 7 | 636.36 | 38 | 29 | 763.16 |
| 7 | 45-49 | 17 | 4 | 235.29 | 14 | 12 | 857.14 | 31 | 16 | 516.13 |
| 8 | 50 and above | 10 | 10 | 1000 | 11 | 9 | 818.18 | 21 | 19 | 904.76 |
| 9 | 15-49 | 167 | 109 | 652.69 | 120 | 89 | 741.67 | 287 | 198 | 689.89 |

TABLE 11
Sex ratio of surviving children

| Sl. No. | Present age of mother | Study area | | | | | | Females (10) | Males (11) | Sex ratio |
|------------|--------------------------|--------------|----------------|------------------|--------------|----------------|------------------|-----------------|---------------|-----------|
| | | Males (3) | Females (4) | Sex ratio (5) | Males (6) | Females (7) | Sex ratio (8) | | | |
| 1 | 15-19 | 6 | 1 | 168.66 | 6 | 4 | 688.67 | 12 | 5 | 416.67 |
| 2 | 20-24 | 3 | 3 | 1,000 | 6 | 10 | 1,000.00 | 9 | 3 | 1,444.44 |
| 3 | 25-29 | 14 | 18 | 928.57 | 21 | 11 | 623.81 | 35 | 24 | 685.71 |
| 4 | 30-34 | 22 | 17 | 772.12 | 21 | 12 | 571.43 | 43 | 28 | 674.42 |
| 5 | 35-39 | 21 | 12 | 571.43 | 20 | 11 | 550.00 | 41 | 23 | 560.97 |
| 6 | 40-44 | 10 | 6 | 600.00 | 8 | 6 | 750 | 18 | 12 | 666.67 |
| 7 | 45-49 | 9 | 3 | 333.33 | 10 | 3 | 800 | 19 | 11 | 578.55 |
| 8 | 50 and above | 1 | 4 | 4,000 | 7 | 6 | 857.14 | 8 | 10 | 1,250 |
| 9 | 15-40 | 85 | 56 | 547.06 | 92 | 62 | 673.91 | 177 | 117 | 601.02 |

Average number of children ever born per woman.

The living conditions are so different between the Dhenkanal and Keonjhar study areas that one may think of some difference in regard to the average number of children born per woman in these two areas. The Table 12 presents information about this matter. It shows that with the advance in age in the case of Dhenkanal the average number of children ever born per woman has increased up to the 35-39 years beyond which it has decreased. The same trend is also noticed in the case of Keonjhar except one difference that in this case the age-group beyond which the average declined is

45-49 years. As compared with the Dhenkanal study area the average number of children ever born per woman is greater in five out of eight age-groups in the Keonjhar study area. In this the average has been as high as five, but in the case of Dhenkanal the figure has not exceeded three in any age-group. As compared with all India average it is seen that the averages in the first three age-groups are lower in India than in the study areas taken together. But in the remaining five higher age-groups the averages are much higher. For example, the average in the age-group of 50 years and above for both the study areas is only 2 whereas the corresponding figure for the country as a whole is as high as 4.738.

Average number of children ever born alive per woman

Average number of children ever born alive per woman in different age-groups is given in the Table 12.

TABLE 12
Average number of children ever born alive per woman

| Area | Age-group | | | | | | | | | |
|------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-41 | 45-49 | 50+ | 15-49 | |
| Keonjhar study area | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | |
| Dhenkanal study area | 1 | 2 | 2 | 3 | 3 | 5 | 5 | 2 | 2 | |
| Keonjhar and Dhenkanal | 1 | 2 | 3 | 3 | 3 | 4 | 4 | 2 | 3 | |
| India | ... | 0.173 | 1.33 | 2.413 | 3.455 | 4.264 | 4.712 | 4.969 | 4.738 | |

Child-woman ratio (CWR)

The child-woman ratio (CWR) is calculated as follows :

$$1. R_1 = \frac{P(0-4)}{F(15-49)} \times 1000$$

or

Proportion (P) of total living children in the age-group of 0-4 years to females (F) in the age-group of 15-49 years.

$$2. R_2 = \frac{P(5-9)}{F(20-54)} \times 1000$$

Proportion (P) of total living children in the age-group of 5-9 years to females (F) in the age-group of 20-54 years.

The table 13 gives the data on CWR for the study areas as compared with Orissa and India as a whole.

TABLE 13
Child-Women Ratio (CWR) 1984

| Study Area | CWR | |
|---------------|----------------|----------------|
| | R ₁ | R ₂ |
| 1. Keonjhar | ... | 371 |
| 2. Dhenkanal | ... | 358 |
| Orissa (1981) | ... | 507 |
| India (1981) | ... | 548 |

It is seen that between the two study areas Dhenkanal shows a lower fertility level both in R_1 and R_2 than what is recorded for Keonjhar. The CWRs corresponding to the age-group 0-4/15-49 and to the age-group 5-9/20-54 for both the study areas for 1984 are much lower than what those in Orissa and India as a whole for 1981.

Age specific marital fertility rate (ASMFR)

The age specific marital fertility rate (ASMFR) is calculated to find out the average number of children born alive during the last year per married woman of a particular age-group. The Table 14 gives the ASMFR for six age-groups for the study areas. The last row of the table gives general marital fertility rate (GMFR) for 15-49 years.

TABLE 14
ASMFR

| Age-groups | Study areas | | |
|-------------------|-------------|-----------|-----------------------------------|
| | Keonjhar | Dhenkanal | Keonjhar Dhenkanal combined |
| (1) | (2) | (3) | (4) |
| 15-19 | 0.42 | 0.16 | 0.29 |
| 20-24 | 0.26 | 0.09 | 0.18 |
| 25-29 | 0.26 | 0.18 | 0.22 |
| 30-34 | 0.20 | 0.10 | 0.15 |
| 35-39 | 0.15 | 0.04 | 0.10 |
| 40-44 | 0.11 | 0.2 | 0.16 |
| GMFR(15-49)200/18 | 108.33 | 157.3 | |
| Study Area | | | |
| India | .. | .. | 143 |

The table shows that the age specific marital fertility rate for all the six age-groups is less in the case of Dhenkanal than that of Keonjhar. The general marital fertility rate (GMFR) is also lower in Dhenkanal than that of Keonjhar. Both the study areas record a lower GMFR as compared with the rural areas of India as a whole which is 143.

Barren women

Married women who have attained menopause and are above 40 years of age and have not been conceived are considered barren. The Table 15 gives the distribution of barren women in the study area.

TABLE 15
Barren women

| Age-group | Keonjhar | Dhenkanal |
|-----------|----------|-----------|
| 35-39 | .. | 1 |
| 40-44 | .. | 1 |
| 45-49 | .. | 2 |
| Total | .. | 4 |
| | | 3 |

The barren woman belonging to the age-group 35-39 is really of 39 years old and has no possibility of bearing child. There are thus four barren women among 117 married women of the age-group beyond 39 years of age in Keonjhar district. This works out 3.42 per cent of barren women who have now no possibility of bearing children.

In the case of Dhenkanal there are three barren women above 40 years of age and the proportion of barren women in Dhenkanal comes to 2.5 per cent. Besides these barren women there are some married women who have as yet no child born to them (either still birth or live birth) although they have been enjoying conjugal life. The Table 16 gives a distribution of such women having no experience of conception so far.

TABLE 16
Women with no issue so far

| Actual age | Study area | |
|------------|------------|-----------|
| | Keonjhar | Dhenkanal |
| 25 | .. | .. |
| 27 | .. | .. |
| 31 | .. | 1 |
| 32 | .. | 1 |
| 34 | .. | .. |
| 35 | .. | 1 |
| Total | .. | 2 |
| | | 5 |

There is a general notion that the Juangs particularly the section living in the Juangpith of Keonjhar district have a low reproductive or fertility rate. This study which was taken up in five Juang villages in the Juangpith does not prove the public idea to be true. The Juangs of Dhenkanal are settled cultivators, agricultural labourers and wage earners. Their counterparts of the Juangpith are primarily shifting cultivators. It is generally believed that the Dhenkanal Juangs who are settled agriculturists and enjoy diversified economic pursuits are better fed than their Keonjhar Juangs who depend for their livelihood upon shifting cultivation which is a primitive form of economic pursuit. The

low food intake and resulting mal nutrition are attributed for low fertility rate among the Keonjhar Juangs. But that is also not a fact. The section dealing with the dietary habits shows that no serious deficiency either in the quantity and food value is noticed in both sides. Rather it is found that the intake of certain foods is sufficient in both areas. There are certain other food items the intake of which is sufficient in one area and deficient in another. If such differences have attributed to the cause of low fertility in one area and high fertility in another area it is necessary to investigate the matter by taking the study on a larger coverage.

ANNEXURE 1 (a)
Works from Morning till Night

(Kolonjar Study Area)

| Hours | Man | Woman | Children | Remarks |
|---------------------|---|--|---|--|
| 4 a. m.—8 a. m. . . | Get up and attend the call of nature. | Get up and attend the call of nature. | | |
| 6 a. m.—8 a. m. . . | Gather at the Majang and spend time in smoking and leisurely gossiping, brushing teeth and eating the morning meal. | Domestic Chores—Clean the house—wash pots and utensils—fetch water from nearby streams, haking paddy and preparing food and serving meals, child care. | Older children attend the younger ones and girls assist mothers in household work. Take morning meal and prepare to go to work with parents. Small children gather to play around the village. | |
| 8 a. m.—10 a. m. | Leave home for work site | Leave home for work site | | No work |
| 10 a. m.—12 Noon | Manual Labour | Manual Labour—(Same as those of the males). | Younger children are left at home while parents work outdoors. Older children and old persons attend younger children at home. Older children also accompany parents to the work site to render assistance. | |
| 12 Noon—2 p. m. . . | Agicultural work of shifting cultivation sites or other farm lands or work for wage earning. Collection of fire wood, leaves and edibles from the forest. | | | |
| 2 p. m.—4 p. m. . . | | | | |
| 4 p. m.—6 p. m. . . | Return home from work, eat the evening meal. | Return home from outdoor work. | Return home from outdoor work. | No work |
| | | Domestic Chores—Fetch water—Prepare evening meal, prepare leaf cups, serve meal, feed children, clean utensils. | Girls assist mothers in performing domestic work. | |
| 6 p. m.—8 p. m. . . | Gather, gossip, and relax at the Majang. | Go to bed after finishing domestic work. Sometimes go together to sing and dance. | Drum-flock | Go to bed after the evening meal. Gather up boys and girls sometimes engage in gossiping, joking and chingoo dance or singing. |
| 8 p. m.—4 a. m. . . | Some people go to the cropped field to watch the crops against the attack of wild animals. Young people sometimes enjoy the time by singing and dancing. | | | |

ANNEXURE 1 (b)
Works from Morning till Night

(Dhankantli Study Area)

| Hours | Men | Women | Children | Remarks |
|---|---|--|--|---------|
| 4 a. m.—6 a. m. . . | No work | Leave bed. Brushing teeth, attending to morning ablutions, cleaning house and courtyard. | No work | |
| 6 a.m.—8 a.m. . . | Leave bed. Brushing teeth, attending to morning ablutions, eating breakfast and taking morning meal, cutting grass, feeding cattle and cleaning cowshed. | Cleaning utensils, boiling water and taking care of children. | Leave bed, brushing teeth, attend paddy, fetching water and taking care of children. | |
| 8 a.m.—10 a.m. . . 10 a.m.—12 noon . . . | Preparation for going to field for work. Weeding, transplanting collection of fire wood, cattle grazing and gleaning. | Prepare to go to work-weeding, transplanting, and work for wages, collection of sal leaves and fire wood. | Watching goats while browsing, drying boiled food in sun and washing. Watching the house and taking care of younger children when parents are out for work. Helping the parents in work. | |
| 12 noon—2 p.m. . . 2 p.m.—4 p.m. . . | Time for rest, taking tiffin or meal and resume work in the field. | The same as those of the males. . . | Eating, sleeping, playing | |
| 4 p.m.—6 p.m. . . | Return from field and help in husking paddy. Take rest. Taking tiffin and drinking juice of boiled opium fruits. Leaf-plate making, eating grass, attending call of nature and taking care of cattle and goats. | Return from field, paddy husking, serving food, cleaning utensils, efficating, bathing, selling leaf-plate making, eating grass, attending call of nature and taking care of cattle and goats. | Playing, eating with parents. Cleaning up children help their mothers in household chores. | |
| 6 p.m.—8 p.m. . . | Gathering, gossiping and relaxing at the Akhada ghar (common house). | Preparing and cooking foods. Leaf-plate making and household chores. | Grown up girls help their mothers in work. | |
| 8 p.m.—4 a.m. . . | Taking meal and sleeping . . . | Serving food, taking meal and going to bed. | Eating and going to bed | |

ANNEXURE 2 (a)

Annual Cycle of Activities

(Study Area—Keonjhar)

| Name of the months | Weather | Food | Activities | | | Main | Subsidiary | Wards | Subsidiary |
|-----------------------|---------------------|--|--|--|---|---|---|-------------------------------|-------------------------------|
| | | | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Jan uary- February | Winter .. | Mango, Jack-fruit, Rice, Millets, Beans. | Forest collection and Leisure. | | | Storage of grains after harvest. | Forest Collection and Leisure. | | |
| 49 | Febr uary- March | Mango, Jack-fruit, Meat, of wild animals, Mohua flower. | —Felling trees, debarking and clearing vegetation from the wood. | Collection of edibles, and fire-wood. | Help men in clearing the swidden plots. | Collection of edibles, and fire-wood. | Collection of forest produce. | Collection of forest produce. | Collection of forest produce. |
| | Spring .. | Mango, Jack-fruit, Kenda, Cher. | —De-gassing at Eka for growing pulses. | Collection of forest produce. | —De-gassing at Eka for growing pulses. | Collection of forest produce. | Collection of forest produce. | Collection of forest produce. | Collection of forest produce. |
| | March - April | Mango, Jack-fruit, Kenda, Honey, roots, Green leaves and tubers. | —House thatching and repairing. | —House thatching and repairing. | —Commen a i hunting. | —Help men in thatching house and repairing works. | —Help men in thatching house and repairing works. | Help men in work in forest. | Collection of forest produce. |
| | April-May | Mango, Jack-fruit, Kenda, Honey, roots, Green leaves and tubers. | Burning dried vegetables in Tala field. | Collection of fire wood and edibles from forest. | —Manning Bala lands | Collection of fire wood and edibles from forest. | —Co m mu n hunting. | Help men in work in forest. | Collection of forest produce. |

TABLE 2 (a) —Contd.

| Name of the months | Weather | Food | Activities | | | | Woman | Subsidiary |
|----------------------|---------|--|---|---|---|-------------------------------|-------|------------|
| | | | Main | Subsidiary | Main | (6) | | |
| (1) | (2) | (3) | (4) | (5) | (7) | | | |
| May-June | Summer | Rice, Rice gruel, Mingo, Mingo kernel, Jack-fruit seeds, Regi cakes, Honey, Wild fruits, roots, tubers and green leaves. | —Ploughing and spreading ash in Toiva lands. —Ploughing Ekan lands. —Ploughing Nala lands and sowing other rains. —Ploughing Bila and Ekan/ lands for wet (paddy) cultivation. —Sowing Toiva, Ekan, Nala, Bila and Ekan/ lands. | —Collection of forest produce. Hunting. | —Hosing and spreading ash in Toiva lands. | Collection of forest produce. | | |
| June-July | Rainy | Rice, Rice gruel, Rice cakes and gruel, Wheat, Mingo kernel, Jack-fruit seeds, Edible leaves, roots, Tubers & mushrooms. | Rice, Rice, Millet, Pumpkin, Gourd, Beans, Mudrooms, Edible greens, roots, and tubers, Papaya, Bananas, Drumsticks, Mafud, M a i z e, Cucumber, Ants (Kai) living in mango trees. | —Collection of forest produce. —Help mom in debushing and sowing operations. | —Help mom in debushing and sowing. | Collection of forest produce. | | |
| July-August | Rainy | | Rice, Millet, Pumpkin, Cucumber, Grued, Beans, Mushrooms, Arum, Wild roots, tubers and greens, Papaya, Bananas, Drumsticks, M a h u l, Milte. | —Weeding and debushing Toiva, Ekan and Nala lands. | —Weeding and debushing wet paddy lands. | Collection of forest produce. | | |
| Aug. 8- September | Autumn | | | | | | | |

TABLE 2 (b) —Continued.

| Name of the months | Weather | Food | Activities | | | Wander Subsidary |
|---------------------|---------|--|--|---|--|---|
| | | | Main | Subsidiary | Main | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| September & October | Autumn | Millets, Regd. Maize, Tili, Meli, Amul, Gourd, Cucumber, Pumpkin, Papaya, Durians, Wild fruits, greens, aces and tubers. | Watching crops and harvesting muddy lands. | — | Collection of forest produce. | Reaping Guava land paddy. |
| October- November | Humid | Rice, Maiti, Winter vegetables, Pulses like, Bie, Koitha, Green gram, Kenduls and Ras. | Watching crops of Tili, Meli, and Bie lands. | — | —Collection of forest produce —Help men in harvesting Tili crops. | In festivities dances and visiting relatives. |
| November- December | Humid | Wild fruits, roots, tubers, greens, Meat of wild animals, Rice, Pulses and Winter vegetables. | Harvesting Eken, Meli, crops. | Tili, —Com mu n i ty hunting, —Friends and relatives. | —Sor o as those of moon. | Taking part in festivities dances and visiting relatives. |
| December- January | Winter | Millets, Rice, Pulses, Wild fruits, roots, tubers, greens leaves, Winter vegetables. | —Reaping low land paddy in Bie lands. | — | —Reaping low land paddy, Collection of forest produce. | |

ANNEEXURE 2 (b)
Annual Cycle of Activities

(Study Area—Dhankari)

| Name of the months | Weather | Food | Activities | | | Women Subsidiary |
|--------------------|--------------|---|--|--|--|--|
| | | | Main | Subsidiary | Main | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| January-February | .. Winter .. | Rice, Millets, Beans, Bitter, Dried fish. | Post harvesting activities, Wage earning. | Gleaning | .. Wage earning, Gleaning, Household chores. | Leaf-plate making |
| February-March | .. Spring .. | Rice, Millets, Mung, Bitter, Kolastra. | Wage earning, Gleaning. | Leaf-plate making and selling fuel wood. | Ditto | Selling fuel wood |
| March-April | .. Spring .. | Jack-fruit and wild fruits. | Wage earning, Ploughing. | Gleaning | .. Collection of forest produce, Household chores. | Selling fuel wood and leaf-plate making. |
| April-May | .. Summer | Jack-fruit, Keros, Wild fruits, roots and tubers. | Ploughing, Measuring, Wage earning, House thatching and Repairing. | Collection of forest produce. | Wage earning, collection of forest produce. | Selling fuel wood and leaf-plates. |
| May-June | .. | Rice, Wild fruits, roots and tubers. | Ploughing, Manuring, Sowing paddy seeds, Wage earning. | .. | Wage earning, Collection of fuel wood and soil leaves. | Ditto |

TABLE 2 (B)

| Name of the months | Weather | Food | Activities | | | Women | Subsidiary |
|--------------------|---------|--|--|--------------------------------------|--|------------------------------------|------------|
| | | | Main | Subsidiary | Main | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | |
| June-July | Rainy | Rice, Regi, Greens, Fish. | Ploughing and paddy sowing, Wage earning. | W a g e earning. Household chores | W a g e earning. Collection of fuel wood and leaves. | Ditto | Ditto |
| July-August | Rainy | Rice, Millets, Pumpkin, Greens, Chilly, Mushrooms. | W o d i n g, W a g e earning. | L e a f-p l a t i n g making. | W a g e earning and weeding. | Ditto | Ditto |
| August-September | Autumn | Rice, Pulses, Vegetables and Greens. | Ditto | Ditto | Ditto | Ditto | Ditto |
| September-October | Autumn | Rice, Pulses, Vegetables and Greens. | Harvesting e a r l y variety of paddy. | Watching e a r l y variety of paddy. | Harvesting Cropped lands. | Ditto | Ditto |
| October-November | Hemanta | Rice, Pulses, Greens, Vegetables, Dried fish. | W a g e e a r n i n g, Harvesting. Watching cropped lands. | ., | Harvesting early variety of paddy. | Harvesting early variety of paddy. | Ditto |
| November-December | Hemanta | Ditto | Ditto | ., | ., | ., | Ditto |
| December-January | Winter | ., | Ditto | Harvesting, W a g e earning. | ., | Ditto | Ditto |

ANNEXURE 3 (a)
Food Value (Nutrients composition) of Different Items Taken Daily per Male Adult Unit
(Karnigarh Study Area)

| Sl. No. | Name of the Item | Average daily intake of different Food items per adult unit | | | Food value (Nutrients) | | | | | | |
|---------------------------------------|---------------------|--|----------|---------|------------------------|-------|-------------------|--------------|-----------------|-----|-----|
| | | Quantity (in Kg.) | Moisture | Protein | Fat | Fibre | Carbo- hydrate | Cal- cium | Phos- phorus | Gm. | Gm. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | | |
| 1 | Rice | 0.34 | 42.84 | 29 | 2.04 | 0.68 | 262.6 | 0.034 | 0.95 | | |
| 2 | Wheat Bread | 0.12 | 38.96 | 9.6 | 1.32 | 0.36 | 58.6 | 0.02 | 0.24 | | |
| 3 | Millet | 0.13 | 17.03 | 9.23 | 1.69 | 4.68 | 94.51 | 0.43 | 0.35 | | |
| 4 | Mustard | 0.002 | 0.17 | 0.44 | 0.79 | 0.04 | 0.48 | 0.01 | 0.01 | | |
| 5 | Green Leaves (Spin) | 0.111 | 89.29 | 5.65 | 1.11 | 1.48 | 9.8 | 0.46 | 1 | | |
| 6 | Green papaya | 0.09 | 82.08 | 0.63 | 0.18 | 0.81 | 51.3 | 0.03 | 0.04 | | |
| 7 | Jack fruit seeds | 0.001 | 0.64 | 0.07 | 0.00 | 0.01 | 0.26 | 0.00 | 0.00 | | |
| 8 | Mohit Flower | 0.09 | 16.74 | 3.96 | 0.54 | 1.53 | 64.8 | 0.13 | 0.13 | | |
| 9 | Turmeric | 0.003 | 0.39 | 0.19 | 0.15 | 0.03 | 2.08 | 0.00 | 0.01 | | |
| 10 | Green chilies | 0.007 | 5.75 | 0.2 | 0.04 | 0.48 | 0.43 | 0 | 0.01 | | |
| 11 | Kusum Oil | 0.002 | ... | 2 | ... | ... | ... | ... | ... | | |
| 12 | Common salt (NaCl) | 0.01 | ... | ... | ... | ... | ... | ... | ... | | |
| (a) Total | | 0.506 | 204.64 | 58.98 | 9.86 | 10.76 | 498.79 | 1.1 | 2.74 | | |
| (b) Recommended Dietary allowance | | ... | ... | 55 | 40.60 | ... | ... | 0.4/0.6 | 1.1+ | | |
| (c) Sufficiency/Deficiency percentage | | ... | ... | 3.98(-) | 45.14 | ... | ... | (0.5) | 0.6 | | |

ANNEXURE 3 (a)—Contd.

Fond Value (Nutrients composition) of Different Items taken Daily per Male Adult unit
(Keonjhar Study Area)

Male

| Sl. No. | Average daily intake of different Food items per adult unit Name of the item | Quantity in Kg. | Food value (Nutrients) | | | | | | Mg. Riboflavin (B2) | Acidic Acid (c) |
|--|---|--------------------|------------------------|-----------------------|----------------------------|---------------------------|---------------------------|---------------|---------------------------|--------------------|
| | | | Iron (1) | Common salt (2) | Calorific Energy (3) | Vit. A carotene (4) | Thia- mine (B1) (5) | Niacin (6) | | |
| 1 | Rice | 0.34 | 1.276 | ... | 1,183.2 | 30.6 | 0.82 | 13.6 | 0.41 | ... |
| 2 | Wheat Bread | 0.12 | 3.6 | ... | 1,285.6 | 60 | 0.25 | 1.88 | 0.08 | ... |
| 3 | Millet | 0.13 | 7.02 | ... | 430.3 | 54.6 | 0.05 | 1.43 | 0.25 | ... |
| 4 | Mustard | 0.002 | 0.36 | ... | 10.82 | 5.4 | ... | 0.08 | 0 | 0 |
| 5 | Green Leaves (Sag) | 0.111 | 12.02 | ... | 71.78 | 455.1 | 0.03 | 0.8 | 0.13 | 118.03 |
| 6 | Green papaya | 0.09 | 0.81 | ... | 24.3 | 0 | 0.01 | 0.09 | 0.01 | 10.8 |
| 7 | Jack fruit seeds | 0.001 | 0.01 | ... | 1.33 | 0.1 | 0.00 | 0.00 | 0.00 | 0.11 |
| 8 | Motia flower | 0.009 | 1.36 | ... | 279.9 | 20.7 | 0.03 | 4.68 | 0.8 | 6.3 |
| 9 | Turneric | 0.003 | 0.56 | ... | 10.47 | 0.9 | ... | 0.07 | ... | ... |
| 10 | Green chillies | 0.007 | 0.08 | ... | 2.07 | 1.25 | 0.01 | 0.03 | 0.02 | 7.77 |
| 11 | Kesum Oil | 0.002 | ... | ... | 18 | ... | 1.8 | ... | ... | ... |
| 12 | Common salt (Ncel) | 0.01 | ... | 10 | ... | ... | ... | ... | ... | ... |
| (a) Total | | 0.906 | 50.72 | 10 | 2,318.57 | 4735.65 | 1.8 | 22.46 | 1.7 | 143 |
| (b) Recommended allowance. | | 20.16 | 15—20 | 2500 | 3000 | 1.4 | 19 | 1.5 | 0 | 50 |
| (c) Sufficiency/ Deficiency percentage. | | 30.72 | (—)7.5 | (—)481.43 | 1735.65 | 0.4 | 3.48 | 0.2 | 93 | |

ANNEXURE 3 (a) —Concl.

Food Value (Nutrients Composition) of Different Items taken daily per Female Adult Unit

(Koraput Study Area)

| Sl. No. | Average daily intake of different food items per adult unit | Name of the item | Quantity (in Kg.) | Food Value (Nutrients) | | | | | |
|------------|--|------------------|----------------------|------------------------|---------|------|-------|-------------------|---------|
| | | | | Moisture | Protein | Fat | Fibre | Carbo- hydrate | Calcium |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| 1 | Rice | .. | 0.29 | 24.54 | 4.71 | 0.58 | 23.88 | 0.03 | 0.81 |
| 2 | Wheat Bread | .. | 0.04 | 16.32 | 3.2 | 0.44 | 0.32 | 19.6 | 0.01 |
| 3 | Millet | .. | 0.18 | 23.58 | 12.76 | 2.34 | 6.48 | 13.98 | 0.6 |
| 4 | Mustard | .. | 0.001 | 0.08 | 0.22 | 0.33 | 0.02 | 0.24 | 0 |
| 5 | Green Papaya | .. | 0.07 | 64.4 | 0.49 | 0.14 | 0.63 | 3.99 | 0.02 |
| 6 | Green Leaves (Sag) | .. | 0.103 | 83.6 | 5.25 | 1.03 | 1.37 | 9.09 | 0.42 |
| 7 | Jack Fruit Seeds | .. | 0.005 | 3.22 | 0.33 | 0.02 | 0.07 | 1.29 | 0.00 |
| 8 | Mothia Flavour | .. | 0.025 | 4.65 | 1.1 | 0.15 | 0.42 | 1.8 | 0.03 |
| 9 | Turmeric | .. | 0.002 | 0.26 | 0.13 | 0.1 | 0.05 | 1.39 | 0 |
| 10 | Green Chilles | .. | 0.008 | 6.61 | 0.23 | 0.05 | 0.54 | 0.49 | 0.00 |
| 11 | Kusum Oil | .. | 0.002 | 2 | | | | | |
| 12 | Common Salt | .. | 0.013 | | | | | | |
| (a) | Total | .. | 0.739 | 239.26 | 48.38 | 8.39 | 10.48 | 418.87 | 1.11 |
| (b) | Recommended Dietary allowance | | | 45 | 40.60 | — | — | — | 0.4-0.6 |
| (c) | Sufficiency/Dificiency/percentage | | | — | 3.38 | — | — | — | 0.61 |

ANNEXURE 3 (a)—*Contd.*
Food Values (Nutrient Composition) of Different Items taken daily per Female Adult Unit (Kandianar Study Area)

| Sl. No. | Average daily intake of different food items per adult unit | | | Food Value (Nutrients) | | | | | | |
|---|---|-----------------|---------|------------------------|----------------------|-----------------|----------|--------------|-------------|------------------|
| | Name of the Item | Quantity in Kg. | Item | Common salt NaCl | Calories (Energy) | Carotene | Thiamine | Niacin | Riboflavin | Ascorbic Acid |
| (1) | (2) | (3) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| 1 Rice | ... | 0.29 | 8.12 | 1009.2 | 26.1 | 0.78 | 11.6 | 0.25 | ... | ... |
| 2 Wheat bread | ... | 0.34 | 1.2 | 95.2 | 20 | 0.06 | 0.56 | 0.03 | ... | ... |
| 3 Millet | ... | 0.18 | 9.72 | 595.8 | 75.6 | 0.76 | 1.98 | 0.34 | ... | ... |
| 4 Mustard | ... | 0.001 | 0.18 | 6.41 | 2.7 | ... | 0.04 | 0 | ... | ... |
| 5 Green Peas | ... | 0.07 | 0.63 | 18.9 | 0 | 0.01 | 0.07 | 0.01 | 0.4 | ... |
| 6 Green Leaves (Sug) | ... | 0.103 | 11.16 | 68.61 | 43.23 | 0.03 | 0.72 | 0.12 | 109.52 | ... |
| 7 Jack Fruit Seeds | ... | 0.005 | 0.07 | 6.65 | 0.6 | 0.01 | 0.01 | 0.01 | 0.65 | ... |
| 8 Mahul Flower | ... | 0.025 | 3.75 | 77.75 | 5.76 | 0.01 | 1.3 | 0.22 | 1.75 | ... |
| 9 Turmeric | ... | 0.002 | 0.37 | 6.98 | 0.6 | 0 | 0.06 | ... | ... | ... |
| 10 Green Chilles | ... | 0.008 | 0.1 | 3.28 | 1.4 | 0.01 | 0.04 | 0.02 | 0.08 | ... |
| 11 Kusum Oil | ... | 0.002 | | 18 | | | | | | |
| 12 Common Salt | ... | 0.013 | | 1.3 | | | | | | |
| (a) Total | ... | 0.739 | 35.29 | 1.3 | 1903.78 | 4458.26 | 1.69 | 16.37 | 1.09 | 129.1 |
| (b) Recommended Allowances. | | | Dietary | 30 (17.6) | 2200 | 3000 | 1.1 | 1.5 | 1.2 | 50 |
| (c) Sufficiency/Deficiency per centage. | | | | 5.29 4.5 | (—) 236.22 | (—) 1,488.25 | 0.59 | 1.37 0.11 | (—) 0.11 | 79.1 |

ANNEXURE 3 (b)

Food Value (Nutrients contribution) of Different Items taken Daily per Male Adult Unit

(Dhenkanal Study Area)

| Sl. No. | Foodstuff | Average daily intake of different food items per adult unit | | Quantity in Kg. | Moisture in Gm. | Protein in Gm. | Fat in Gm. | Fibre in Gm. | Quantity of food value consumed per day per adult unit | | |
|---------|--------------------------------|---|--------|-----------------|-----------------|----------------|------------|--------------|--|---------|-----|
| | | (1) | (2) | | | | | | (3) | (4) | (5) |
| 1 | Rice | .. | 0.645 | 81.27 | 54.82 | 3.67 | 1.29 | 497.94 | 0.06 | 1.81 | |
| 2 | Fried/Puffed Rice | .. | 0.071 | 10.44 | 5.33 | 0.07 | 0.21 | 52.54 | 0.01 | 0.11 | |
| 3 | Black gram Dal | .. | 0.0093 | 0.98 | 2.16 | 0.13 | 0.08 | 5.43 | 0.02 | 0.03 | |
| 4 | Potato | .. | 0.012 | 8.96 | 0.19 | 0.01 | 0.05 | 2.75 | 0.001 | 0.004 | |
| 5 | Onion & Garlic | .. | 0.017 | 12.72 | 0.64 | 0.02 | 0.10 | 3.45 | 0.02 | 0.03 | |
| 6 | Greens | .. | 0.040 | 32.47 | 2.04 | 0.40 | 0.53 | 3.53 | 0.16 | 0.38 | |
| 7 | Ladies Fingers | .. | 0.002 | 1.76 | 0.04 | 0.004 | 0.02 | 0.16 | 0.001 | 0.002 | |
| 8 | Pumpkin | .. | 0.010 | 9.20 | 0.14 | 0.01 | 0.07 | 0.63 | 0.01 | 0.003 | |
| 9 | Mushrooms | .. | 0.003 | 2.65 | 0.14 | 0.024 | 0.012 | 0.13 | 0.002 | 0.033 | |
| 10 | Fish | .. | 0.006 | 0.434 | 0.42 | 0.06 | .. | 0 | 0.485 | 0.19 | |
| 11 | Mustard Oil | .. | 0.005 | .. | 5 | .. | .. | .. | .. | .. | |
| 12 | Salt | .. | 0.013 | .. | .. | .. | .. | .. | .. | .. | |
| 13 | Chillies | .. | 0.004 | 3.30 | 0.12 | 0.02 | 0.81 | 0.24 | 0.001 | 0.007 | |
| 14 | Total | .. | 0.036 | 164.264 | 70.04 | 9.62 | 3.172 | 506.69 | 1.76 | 3.57 | |
| 15 | Recommended dietary allowance. | .. | .. | .. | 70 G. | 50 G. | .. | 440 G. | 0.8 G. | 1.4 G. | |
| 16 | Sufficiency | .. | .. | .. | 0.04 G. | .. | .. | 126.69 G. | 1.68 G. | 2.17 G. | |
| 17 | Deficiency | .. | .. | .. | .. | 40.38 G. | .. | .. | .. | .. | |

ANNEXURE 3 (b)—*Contd.*

(Dhankantal study area)

| Sl. No. | Average daily intake of different food items per adult unit Food-stuff | Quantity in Kg. | Iron in Mg. | Common salt NaCl in Gm. | Quantity of food value consume per day per adult unit | | | | | |
|------------|--|--------------------|----------------|----------------------------------|---|--------------------|--------------------|------------------|----------------------|----------------------------|
| | | | | | Calories Energy in Kcal. | Carotene in Mg. | Thiamine in Mg. | Niacin in Mg. | Riboflavin in Mg. | Ascorbic Acid in Mg. |
| (1) | (2) | (3) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| 1 | Rice | .. | 0.645 | 18.06 | .. | 2244.60 | 68.05 | 1.740 | 26.80 | 0.770 |
| 2 | Fried/Puffed Rice | .. | 0.071 | 4.40 | .. | 232.17 | .. | 0.160 | 2.91 | 0.03 |
| 3 | Black gram Dal | .. | 0.009 | 0.88 | .. | 31.50 | 3.42 | 0.04 | 0.18 | 0.03 |
| 4 | Potato | .. | 0.012 | 0.08 | .. | 11.93 | 2.88 | 0.01 | 0.14 | 0.01 |
| 5 | Onion & Garlic | .. | 0.017 | 0.17 | .. | 16.40 | 1.27 | 0.120 | 0.07 | 0.02 |
| 6 | Greens | .. | 0.040 | 4.33 | .. | 25.87 | 10.40 | 0.01 | 0.28 | 0.06 |
| 7 | Ladies Fingers | .. | 0.002 | 0.03 | .. | 0.82 | 1.16 | 0.001 | 0.01 | 0.002 |
| 8 | Pumpkin | .. | 0.010 | 0.07 | .. | 2.80 | 5.0 | 0.006 | 0.06 | 0.004 |
| 9 | Mushrooms | .. | 0.003 | 0.05 | .. | 1.29 | 0 | 0.004 | 0.07 | 0.005 |
| 10 | Fish | .. | 0.005 | 1.13 | .. | 18.20 | 0 | 0.006 | 0.27 | 0.004 |
| 11 | Mustard oil | .. | 0.005 | .. | .. | 45 | .. | .. | .. | .. |
| 12 | Salt | .. | 0.013 | .. | 13 | .. | .. | .. | .. | .. |
| 13 | Chillies | .. | 0.004 | 0.05 | .. | 3.86 | 7 | 0.000 | 0.02 | 0.010 |
| 14 | Total | .. | 0.836 | 29.25 | 13 | 2634.39 | 1728.78 | 2.095 | 29.80 | 0.93 |
| 15 | Recommended dietary allowance. | .. | 27.7 | Mg. | 176.0 | 2500 | 3000 G. | 1.8 Mg. | 19 Mg. | 51.93 |
| 16 | Sufficiency | .. | .. | 1.66 G. | .. | 494.39 | .. | 1.29 G. | 10.80 G. | .. |
| 17 | Deficiency | .. | .. | .. | 4.6 G. | .. | 1271.22 Mg. | .. | .. | 0.57 Mg. 148.07 Mg. |

ANNEXURE 3 (b) (Contd.)

Food value (Nutrients Composition) of different items taken daily per female adult and

(Dhankhanj Study Area)

| Sl. No. | Average food items per adult unit | Food-stuff | Quantity in Kg. | Quantity of food value consumed per day per adult unit | | | | | | (Dhankhanj Study Area) |
|------------|---|------------|--------------------|--|-------|-------|-------|---------|-------|------------------------|
| | | | | (1) | (2) | (3) | (4) | (5) | (6) | |
| 1 | Rice | | 0.618 | 77.87 | 52.53 | 3.71 | 1.23 | 477.10 | 0.06 | 1.73 |
| 2 | Puffed Rice | | 0.024 | 3.63 | 1.8 | 0.02 | 0.17 | 17.76 | 0.005 | 0.04 |
| 3 | Dal | | 0.003 | 0.98 | 2.16 | 0.13 | 0.08 | 6.43 | 0.02 | 0.03 |
| 4 | Potato | | 0.016 | 11.95 | 0.26 | 0.02 | 0.08 | 3.66 | 0.002 | 0.006 |
| 5 | Onion and Garlic | | 0.016 | 11.97 | 0.6 | 0.02 | 0.10 | 3.25 | 0.02 | 0.03 |
| 6 | Gram | | 0.067 | 46.27 | 2.90 | 0.57 | 0.76 | 5.03 | 0.23 | 0.53 |
| 7 | Ladies Finger | | 0.002 | 1.76 | 0.04 | 0.004 | 0.02 | 0.16 | 0.001 | 0.002 |
| 8 | Pumpkin | | 0.010 | 9.26 | 0.14 | 0.01 | 0.07 | 0.53 | 0.001 | 0.003 |
| 9 | Mushroom | | 0.003 | 2.06 | 0.14 | 0.24 | 0.012 | 0.129 | 0.001 | 0.033 |
| 10 | Fish | | 0.007 | 0.609 | 0.19 | 0.08 | ... | 0 | 0.068 | 0.27 |
| 11 | Mustard oil | | 0.006 | ... | ... | 8 | ... | ... | ... | ... |
| 12 | Salt | | 0.017 | ... | ... | ... | ... | ... | ... | ... |
| 13 | Green Chilles | | 0.003 | 2.47 | 0.09 | 0.02 | 0.20 | 0.18 | 0.001 | 0.002 |
| 14 | Total | | 0.787 | 169.329 | 66.85 | 9.824 | 2.702 | 613.219 | 0.41 | 254 |
| 15 | Recommended dietary | | ... | ... | 70 | 50 | ... | 440 | 0.8 | 1.4 |
| 16 | Sufficiency | | ... | ... | ... | ... | ... | 73.22 | ... | 1.14 |
| 17 | Deficiency | | ... | ... | 3.16 | 40.18 | ... | 0.39 | ... | ... |

ANNEXURE 3 (b)—Cancelled.

Food value (Nutrients Composition) of different items taken daily per female adult unit

(Dhankantal Study Area)

| Sl. No. | Food-stuff | Average daily intake of different food items per adult unit | | Quantity in Kg. | Intake in Mg. | Quantity of food value consume per day per adult unit | | | | | | | | | | | |
|---------|--------------------------------|---|--------|-----------------|---------------|---|----------|----------|----------|---------|------------|---------------|--------|------|------|------|------|
| | | (1) | (2) | | | Common salt | Calories | Carotene | Thiamine | Nicotin | Riboflavin | Ascorbic Acid | in Mg. | (18) | | | |
| | | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| 1 | Rice | 0.618 | 17.30 | .. | 2150.61 | 55.62 | 1.67 | .. | 24.72 | 0.74 | .. | .. | .. | .. | .. | .. | .. |
| 2 | Puffed Rice | 0.024 | 1.49 | .. | 78.48 | .. | 0.05 | 0.18 | 0.01 | .. | .. | .. | .. | .. | .. | .. | .. |
| 3 | Oil | 0.009 | 0.68 | .. | 31.6 | 342 | 0.04 | 0.18 | 0.03 | .. | .. | .. | .. | .. | .. | .. | .. |
| 4 | Potato | 0.016 | 0.11 | .. | 16.84 | 384 | 0.02 | 0.19 | 0.002 | .. | 2.72 | .. | .. | .. | .. | .. | .. |
| 5 | Onion and Garlic | 0.016 | 0.16 | .. | 15.44 | 1.2 | 0.11 | 0.06 | 0.02 | .. | 1.62 | .. | .. | .. | .. | .. | .. |
| 6 | Green | 0.057 | 4.33 | .. | 38.87 | 2337 | 0.02 | 0.40 | 0.07 | .. | 60.61 | .. | .. | .. | .. | .. | .. |
| 7 | Ladies finger | 0.002 | 0.03 | .. | 0.82 | 116 | 0.001 | 0.01 | 0.002 | .. | 0.32 | .. | .. | .. | .. | .. | .. |
| 8 | Pumpkin | 0.010 | 0.07 | .. | 2.8 | 6 | 0.006 | 0.05 | 0.004 | .. | 0.2 | .. | .. | .. | .. | .. | .. |
| 9 | Mushroom | 0.003 | 0.045 | .. | 1.20 | 0 | 0.004 | 0.07 | 0.005 | .. | 0.36 | .. | .. | .. | .. | .. | .. |
| 10 | Fish | 0.007 | 1.98 | .. | 25.48 | 0 | 0.008 | 0.37 | 0.006 | .. | 0 | .. | .. | .. | .. | .. | .. |
| 11 | Mustard oil | 0.006 | .. | .. | 45 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 12 | Salt | 0.017 | 1.17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| 13 | Green Chilling | 0.003 | 0.04 | .. | 0.23 | 525 | 0.006 | 0.02 | 0.01 | .. | 3.33 | .. | .. | .. | .. | .. | .. |
| 14 | Total | 0.787 | 26.035 | 17 | 2404.36 | 2412.49 | 1.935 | 26.26 | 0.889 | .. | 69.46 | .. | .. | .. | .. | .. | .. |
| 15 | Recommended dietary allowance. | .. | 27.7 | 17.5 | 2500 | 3000 | 1.8 | 1.9 | 1.5 | .. | 200 | .. | .. | .. | .. | .. | .. |
| 16 | Sufficiency | .. | .. | .. | .. | .. | .. | 0.14 | 7.26 | .. | .. | .. | .. | .. | .. | .. | .. |
| 17 | Deficiency | .. | .. | 1.66 | 0.5 | 95.64 | 587.51 | .. | .. | 0.61 | 130.54 | .. | .. | .. | .. | .. | .. |

ANNEXURE 4(a)

Composition of the Average Diet of Juang Male compared with Indian Council of Medical Research (ICMR) Recommended Diet.
(Korjhar Study Area)

| Sl. No. | Constituents | Nutrients | ICMR Recommended quantity | Average Intake of an adult Juang (Male) | Excess | Deficiency | Percentage (7) |
|------------|---------------------------|-----------|------------------------------|--|-------------|------------|-------------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | |
| 1 | Protein | | 70 Gm. | 58.98 Gm. | .. | 11.02 Gm. | 15.74(—) |
| 2 | Carbohydrate | | 440 Gm. | 408.79 Gm. | 78.79 Gm. | .. | 13.38(+) |
| 3 | Fat | | 50 Gm. | 9.86 Gm. | .. | 40.14 Gm. | 80.28(—) |
| 4 | Calories | | 2800 Kcal | 2318.57 Kcal | .. | 181.43 Gm. | 7.26(—) |
| 5 | Calcium | | 0.8 Gm. | 1.1 Gm. | 0.3 Gm. | .. | 37.5(+) |
| 6 | Phosphorus | | 1.4 Gm. | 2.74 Gm. | 1.34 Gm. | .. | 95.71(+) |
| 7 | Iron | | 27.7 Mg. | 50.72 Mg. | 23.02 Mg. | .. | 83.1(+) |
| 8 | Vitamin'A (β-Carotene) | | 3000 Mg. | 4735.55 Mg. | 1735.55 Mg. | .. | 57.85(+) .. |
| 9 | (Thiamine) Vitamin-B1 | | 1.8 Mg. | 1.8 Mg. | .. | .. | .. |
| 10 | (Riboflavin) Vitamin-B2 | | 1.5 Mg. | 1.7 Mg. | 0.2 Mg. | .. | 13.33(+) .. |
| 11 | Niacin | | 1.9 Mg. | 22.46 Mg. | 3.46 Mg. | .. | 18.2(+) .. |
| 12 | (Ascorbic Acid Vitamin-C) | | 200 Mg. | 143 Mg. | .. | 57 Mg. | 28.5(—) .. |
| 13 | Common Salt | | 17.5 Mg.(15—20) | 10 Gm. | .. | 7.5 Gm. | 42.89(—) .. |

ANNEXURE 4 (b)

Composition of the Average Diet of Juvenile Females compared with Indian Council of Medical Research (ICMR) Recommended Diet
(Kochijar Study Area)

| Sl. No. | Constituents | Nutrients | ICMR Recommended quantity | Average Intake of an Adult Juvenile female | Excess | Deficiency | Percentage |
|---------|----------------------------|-------------|---------------------------|--|-------------|------------|------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | |
| 1 | Protein | 70 Gm. | 48.38 Gm. | .. | 21.62 Gm. | 30.88 (-) | |
| 2 | Carbohydrate | 440 Gm. | 418.87 Gm. | .. | 21.13 Gm. | 4.6 (-) | |
| 3 | Fat | 50 Gm. | 8.39 Gm. | .. | 4.61 Gm. | 83.22 (-) | |
| 4 | Calories | 2500' Kcal. | 1903.78 Kcal. | .. | 596.22 kcal | 23.85 (-) | |
| 5 | Calcium | 0.8 Gm. | 1.11 Gm. | 0.31 Gm. | .. | 38.75 (+) | |
| 6 | Phosphorus | 1.4 Gm. | 2.41 Gm. | 1.01 Gm. | .. | 72.14 (+) | |
| 7 | Iron | 27.7 Mg. | 35.29 Mg. | 7.69 Mg. | .. | 27.4 (+) | |
| 8 | B-Carotene Vitamin A | 3000 Mg. | 4486.26 Mg. | 1408.25 Mg. | .. | 48.94 (+) | |
| 9 | THIAMINE Vitamin—B1 | 1.8 Mg. | 1.69 Mg. | .. | 0.12 Mg. | 6.67 (-) | |
| 10 | RIBOFLAVIN Vitamin—B2 | 1.5 Mg. | 1.09 Mg. | .. | 0.41 Mg. | 27.33 (-) | |
| 11 | NIACIN | 1.9 Mg. | 1.637 Mg. | .. | 2.63 Mg. | 13.84 (-) | |
| 12 | ASCORBIC ACID Vitamin—C | 200 Mg. | 129.1 Mg. | .. | 70.9 Mg. | 35.45 (-) | |
| 13 | Common Salt Nat. | 17.5 Mg. | 13 Mg. | .. | 4.5 Gm. | 25.71 (-) | |

ANNEXURE 4 (b)

Composition of the Average Diet of Young Male compared with Indian Council of Medical Research (ICMR) recommended Diet

(Dhankantal Study Area)

| Sl. No. | Constituents Nutrients | ICMR Recommended Quantity | Average Intake of an Adult Jueng (Male) | Excess | Deficiency | Percentage |
|---------|----------------------------|---------------------------|---|--------------|--------------|------------|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| 1 | Protein | 70 Gm. | 70.04 Gm. | 0.04 Gm. | .. | 0.06 (+) |
| 2 | Carbohydrate | 440 Gm. | 546.69 Gm. | 126.69 Gm. | .. | 28.79 (+) |
| 3 | Fat | 50 Gm. | 86.62 Gm. | .. | 40.38 Gm. | 60.36 (+) |
| 4 | Calories | 2,500 Kcal | 2,634.39 (Kcal) | 134.39 Kcal. | .. | 5.37 (+) |
| 5 | Calcium | 0.8 Gm. | 1.76 Gm. | 0.98 Gm. | .. | 210 (+) |
| 6 | Phosphorus | 1.4 Gm. | 3.57 Gm. | 2.17 Gm. | .. | 155 (+) |
| 7 | Iron | 27.7 Mg. | 29.25 Mg. | 1.55 Mg. | .. | 5.59 (+) |
| 8 | Carotene Vitamin A | 300 Mg. | 1,728.78 Gm. | .. | 1,271.22 Mg. | 42.37 (-) |
| 9 | Thiamine Vitamin B | 1.8 Mg. | 2.09 Mg. | 1.29 Mg. | .. | 71.66 (+) |
| 10 | Riboflavin Vitamin B2 | 1.5 Mg. | 0.93 Mg. | 0.57 Mg. | .. | 38 (+) |
| 11 | Nicelin | 1.8 Mg. | 29.80 Mg. | 10.80 Mg. | .. | 58.84 (+) |
| 12 | Ascorbic Acid Vitamin C | 200 Mg. | 51.93 Mg. | .. | 148.07 Mg. | 74.03 (-) |
| 13 | Common Salt | .. | 175 Mg. (15—20) | 13 (9) | .. | 4.5 Mg. |
| | | | | | | 28.71 (-) |

TABLE 4 (b)

Composition of the Average Diet of Jhang Female compared with Indian Council of Medical Research (ICMR) recommended Diet (Dhankani Study Area)

| Sl. No. | Constituents | Nutrients | ICMR Recommended quantity | Average intake of an adult Jhang (F) | Excess | Deficiency | Percentage |
|---------|----------------------------|-----------|---------------------------|--------------------------------------|--------|------------|-------------|
| (1) | (2) | | (3) | (4) | (5) | (6) | (7) |
| 1 | Protein | | 70 Gm. | 66.85 Gm. | .. | 3.15 | 4.5(—) |
| 2 | Carbohydrate | | 440 Gm. | 513.22 Gm. | .. | .. | 16.9(+) |
| 3 | Fat | | 50 Gm. | 9.82 Gm. | .. | 40.18 Gm. | 80.36(—) |
| 4 | Calories | | 2,800 Kcal | 2,404.38 Kcal | .. | 95.65 Gm. | 3.83(—) |
| 5 | Calcium | | 0.8 Gm. | 0.41 Gm. | .. | 0.39 Gm. | 48.75(—) |
| 6 | Phosphorus | | 1.4 Gm. | 2.64 Gm. | .. | .. | .. (+) |
| 7 | Iron | | 27.7 Mg. | 26.04 Mg. | .. | 1.68 Mg. | 6.98(—) |
| 8 | Carotene Vitamin A | | 3,000 Mg. | 2,412.49 Mg. | .. | 587.51 Mg. | 19.08(—) |
| 9 | Thiamine Vitamin B | | 1.8 Mg. | 1.94 Mg. | .. | 3.14 Mg. | 7.78(+) .. |
| 10 | Riboflavin Vitamin B | | 1.5 Mg. | 0.89 Mg. | .. | 0.61 Mg. | 60.67(—) |
| 11 | Niacin | | 1.8 Mg. | 2.26 Mg. | .. | .. | 38.16(+) .. |
| 12 | Ascorbic Acid Vitamin C | | 200 Mg. | 69.46 Mg. | .. | 130.54 Mg. | 65.27(—) |
| 13 | Common Salt | | 175 Mg. | 17 Mg. | .. | 0.5 Gm. | 2.08(—) |